

Exploring middle ground: Positioning middle adults within the familial digital communication landscape.

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Contents

ABSTRACT	6
DECLARATION OF AUTHORSHIP	8
ACKNOWLEDGEMENTS	9
ACRONYMS	10
PUBLISHED MATERIAL	11
LIST OF FIGURES AND TABLES	12
SECTION 1: THEORETICAL FRAMEWORKS, LITERATURE REVIEW AND METHODOLOGY	13
CHAPTER 1: INTRODUCTION	14
CHAPTER 2: FAMILIES AND DIGITAL COMMUNICATION TECHNOLOGIES	24
2.0. INTRODUCTION	24
2.1. DEFINING 'GENERATIONAL COMMUNICATION'	25
2.2. DEFINING 'THE FAMILY'	27
2.3. FRAMING FAMILIES IN CONTEMPORARY RESEARCH	28
2.3.1. <i>Household studies</i>	28
2.3.2. <i>Intra and inter-generational studies</i>	30
2.3.3. <i>Singular studies</i>	31
2.3.4. <i>Nested studies</i>	33
2.3.5. <i>Peer studies</i>	34
2.4. THE GENERATION GAP	35
2.4.1. <i>Youth and older adults</i>	37
2.4.2. <i>Defining 'older adult': separating the young elderly from the older elderly.</i>	38
2.4.3. <i>Adults as the invisible middle generation</i>	40
2.5. CONCLUSION	40
CHAPTER 3: DWELLING IN CONNECTED SPACE	42
3.0. INTRODUCTION	42
3.1. FRAMING DIGITAL TECHNOLOGY CONSUMPTION AND DOMESTICATION	43
3.1.1. <i>Social Construction of Technology (SCOT)</i>	44
3.1.2. <i>Cowan's 'consumption junction'</i>	46
3.1.3. <i>Diffusion of innovations</i>	46
3.1.4. <i>Wyatt's construction of users and non-users (of the Internet)</i>	48
3.1.5. <i>Domestication theory</i>	49
3.1.6. <i>The five stages of 'objectification' within the domestication framework</i>	53
3.2. FRAMING THE LITERATURE ABOUT DIGITAL COMMUNICATION TECHNOLOGY	56
3.2.1. <i>Digital divide and social impact studies</i>	57
3.2.2. <i>Technology use in the home: communal, private and portable</i>	58
3.2.3. <i>Technology used to communicate between family members</i>	63
3.2.3.1. <i>Emotional work and Skype: 'emotional labour', remote 'mothering', and 'care-giving' within families</i>	64
3.2.3.2. <i>Communicating with older adults and the elderly living away from the family home</i>	65
3.2.3. <i>Broadband connectivity</i>	66
3.2.3.1. <i>Computing</i>	67
3.2.3.2. <i>Broadband Internet connectivity and mobile phones</i>	69

3.3. DOMESTICATION IN AN ERA OF 'PROGRESSIVE PRIVATISATION'	70
3.4. DOMESTICATION AND MULTIMODAL CONNECTION	72
3.6. CONCLUSION	73
CHAPTER 4: METHODOLOGY	75
4.0. INTRODUCTION	75
4.1. DESIGNING A METHODOLOGY	76
4.2. LIBRARY-BASED RESEARCH	78
4.2.2. <i>Identifying Technologies and Applications</i>	79
4.3. DATA COLLECTION	80
4.3.1 ONLINE QUESTIONNAIRE	80
4.3.1.1. <i>Introduction</i>	80
4.3.1.2. <i>Advantages of using an online questionnaire</i>	80
4.3.1.3. <i>Designing the online questionnaire</i>	81
4.3.1.4. <i>Writing the online questionnaire</i>	82
4.3.1.5. <i>Questionnaire layout on screen</i>	83
4.3.1.6 PRE-PILOT TESTING AND PILOT TESTING THE ONLINE QUESTIONNAIRE	84
4.3.1.7. <i>Pre-pilot Testing</i>	85
4.3.1.8. <i>The pilot test</i>	86
4.3.1.9. <i>Calls for online questionnaire respondents</i>	88
4.3.1.10. <i>Methods of data analysis for the final online questionnaire</i>	88
4.4. PARTICIPANT INTERVIEWS	90
4.4.1. <i>Introduction</i>	90
4.4.2. THE INTERVIEWS	92
4.4.2.1. <i>Recruiting interviewees</i>	92
4.4.2.2. <i>Snowballing as a recruitment method</i>	92
4.4.2.3. <i>The interviewees</i>	94
4.4.3. <i>Interview period</i>	95
4.4.4. <i>Home as the interview location</i>	96
4.4.5. <i>Giving interviewees a 'voice'</i>	97
4.5. CODING THE INTERVIEW TRANSCRIPTS	97
4.6. CONCLUSION	99
SECTION 2: RESULTS AND DISCUSSION OF HOW INTRA-GENERATIONAL COMMUNICATION IS OCCURRING BETWEEN MIDDLE AND OLDER ADULTS USING THE INTERNET, MOBILE PHONES AND SKYPE.	101
CHAPTER 5: KEEPING CONNECTED AS FAMILY	102
5.0. INTRODUCTION	102
5.1. <i>Online Questionnaire Respondents</i>	103
5.2. WHO ARE THE MIDDLE ADULTS?	104
5.3. TECHNOLOGIES USED IN EVERYDAY LIFE	105
5.4. THE MIDDLE ADULTS' PERSPECTIVE ON THEIR USE OF TECHNOLOGY	108
5.4.1. <i>The Internet</i>	108
5.4.2. <i>The mobile phone</i>	110
5.4.3. <i>Family photographs</i>	115
5.5. WHICH COMMUNICATION TECHNOLOGY DO MIDDLE ADULTS USE FOR FAMILIAL CONNECTION? MOBILE PHONES OR INTERNET?	117
5.6. KEEPING IN CONTACT WITH FAMILY NEARBY AND FAR AWAY	118
5.6.1. <i>Family nearby</i>	118
5.6.2. <i>Family far away</i>	119
5.6.3. <i>Family overseas</i>	120

5.6.3.1. <i>Middle adults as parents as a determining factor in digital communication technology use with family living overseas</i>	122
5.7. WHICH FAMILY MEMBERS DO THEY KEEP IN CONTACT WITH THE MOST, AND HOW?	124
5.7.1. <i>What is your main method in keeping in contact with this person?</i>	125
5.8. HOW DO YOU KEEP IN TOUCH WITH SPECIFIC FAMILY MEMBERS?	126
5.9. KEEPING IN TOUCH AS A GROUP	130
5.10. COMMUNICATING IN LANGUAGES OTHER THAN ENGLISH	132
5.10.1. <i>Instant Messaging</i>	133
5.10.3. <i>Voice</i>	133
5.10.4. <i>SMS</i>	133
5.11. CONCLUSION	133
CHAPTER 6: THE INTERVIEWEES: THEIR ADOPTION AND PRACTICE OF THE INTERNET AND MOBILE PHONE	135
6.0. INTRODUCTION	135
6.1. THE INTERVIEW RESULTS	136
6.2. THE INTERVIEWEES	139
6.2.1. <i>George and Alice</i>	140
6.2.1.1. <i>George reflects on 'gifting' digital technologies to older adult parents and parents-in-law</i>	140
6.2.1.2. <i>Alice – the disruptive transition process from landline to mobile phone</i>	142
6.2.2. <i>Vera and John</i>	145
6.2.2.1. <i>Vera – technology user from an earlier era</i>	145
6.2.2.2. <i>John – IT-literate and empowering Vera</i>	146
6.2.3. <i>Joanne – proactive digital mum juxtaposed with a resistant digital employee</i>	148
6.2.4. <i>Simon – fond of Internet based applications</i>	150
6.2.5. <i>Linda and David – intrepid and confident older adopters</i>	151
6.2.6. <i>Andrea – providing access to her family members</i>	152
6.2.7. <i>Beth – intrigued by technology but not confident</i>	155
6.2.8. <i>Amanda – using new technologies for the traditional weekly call home</i>	157
6.3. CONCLUSION	159
CHAPTER 7: DIGITAL MEDIA LITERACY IN FAMILIES	162
7.0. INTRODUCTION	162
7.1. WHO DO THEY ASK FOR HELP WITH TECHNOLOGY?	164
7.1.1. <i>Gender</i>	164
7.2. DIGITAL MEDIA LITERACY AND INCLUSION	167
7.2.1. <i>Domestic networking and the digital media environment @ home</i>	169
7.2.2. <i>Middle adults' perspective on the digital media literacy of older adults</i>	171
7.2.2.1. <i>Disinterest</i>	172
7.2.2.2. <i>Resistance</i>	173
7.2.2.3. <i>Lack of conceptual understanding</i>	176
7.3. EMPOWERING OLDER ADULTS	179
7.3.1. <i>Supporting access</i>	180
7.3.2. <i>Supporting education</i>	184
7.3.3. <i>Empowerment fuels innovation</i>	186
7.4. REFLECTIONS ON DIGITAL MEDIA LITERACY	187
7.4.1. <i>Older adults reflections on their own lack of digital media literacy</i>	188
7.4.2. <i>Middle adults' reflections on their own use of digital technologies</i>	190
7.5. TASK ASSISTANCE: MIDDLE ADULTS ASSISTING OLDER ADULTS WITH TECHNOLOGY	192
7.6. DOMESTIC NETWORKING	194
7.7. CONCLUSION	198

CHAPTER 8 SKYPE: THE LATEST FAMILIAL APPLICATION	201
8.0. INTRODUCTION	201
8.1. SKYPE	202
8.2. THE WEEKLY CALL HOME	205
8.3. KEEPING FAMILIES CONNECTED: PRESENCE AND INTIMACY	209
8.3.1. <i>Social presence</i>	209
8.3.2. <i>Intimacy</i>	210
8.3.3. <i>Establishing stronger relationships</i>	213
8.4. DISCONNECTING FAMILIES: 'ABSENT PRESENCE', INTERRUPTIBILITY, AND MULTI-TASKING.	216
8.5. EMERGING DIFFERENCES BETWEEN TELEPHONE CALLS AND SKYPE	220
8.5.1. <i>Availability and spontaneous contact using 'online status indicators'</i>	220
8.5.2. <i>Changing practices and incipient talk</i>	224
8.5.3. <i>Webcams and their role in video call 'films'</i>	225
8.5.3.1. <i>Location</i>	226
8.5.3.2. <i>Objects</i>	227
8.6. EXPERIENCED USERS AND INNOVATION	228
8.7. TECHNICAL DIFFICULTIES AND 'WORK' WITH NEW TECHNOLOGIES	230
8.8. CONCLUSION: DIGITAL APPLICATIONS CHANGE FAMILIAL TELEPHONY PRACTICE	231
CHAPTER 9: CONCLUSIONS AND FUTURE RESEARCH RECOMMENDATIONS	234
• DOMESTIC NETWORKING	240
• DIGITAL MEDIA LITERACY	240
• GENDER-SPECIFIC EMPOWERMENT	241
• SKYPE AND INNOVATION	242
REFERENCES	244
APPENDICES	272
APPENDIX 1: COPY OF THE ONLINE QUESTIONNAIRE	272
APPENDIX 2: CALL FOR PARTICIPANTS	273

Abstract

In the 1980s, a major English study by the Brunel University team that included Roger Silverstone, Eric Hirsch, David Morely, and Sonia Livingstone explored how families had 'domesticated' media technologies such as the television. Since then, few studies have explored families and their relationship with communication technologies, particularly in relation to domestication and the constantly evolving digital environment. This thesis explores the ways in which families are adjusting to evolving communication practices in a rapidly changing digital era. During the era of the Brunel University study, communication technologies were primarily communal and in a fixed location; during the last decade, technological advancements have seen dramatic changes in communication devices. Devices are now converged, individual rather than communal, and mobile rather than fixed.

Families are also now acknowledged as constituting more than a group of people who share the same household. This thesis uniquely explores family from a generational perspective where three generations exist – youth, middle adults, and older adults – irrespective of their residential location and place within the extended family. The results and discussion focus primarily on the generational group of middle adults who are often neglected in communication studies, and it provides valuable insights into this hidden group as they negotiate their use of digital technologies along with those of their children and parents.

Using a multiple-method approach including desktop research, an online questionnaire, and face-to-face interviews, this research responds to the key question: 'How are the adult generations within a family communicating using digital communication technologies?'

The results indicate that the respondent families used a multimodal approach to communication, especially across generations. They used a range of products that included email and short message service (SMS), as well as using voice through

landline phones, mobile phones and telephony products such as Skype. As expected, younger generations used a wider range of technologies than older generations.

This study's results also indicated that families need assistance with digital technologies, especially in relation to domestic networking. Within the family, the important paradigm shift from communal to individual technologies means that all family members need to be informed users of digital technologies in order to keep in touch with each other on an individual rather than a communal basis. So, who helps whom to make domestication decisions about consumption, incorporation, and maintenance? In this study, it was the role of the middle adults to do much of the domestic networking for the other generations. Thus, middle adults play a crucial role in negotiating the type of communication technologies being used, how they are used, and how they are maintained by individuals across households and in some cases across continents.

Declaration of Authorship

I hereby declare that this thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other institution and affirms that to the best of my knowledge the thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis



.....

Scott Rickard

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Acronyms

ABA	Australian Broadcasting Authority
ABS	Australian Bureau of Statistics
ACMA	Australian Communication Media Authority
AIMIA	Australian Interactive Media Industry Association
HCI	Human Computer Interaction Research
ICT	Information Communication Technology
ISP	Internet Service Provider
IT	Information Technology
ITU	International Telecommunications Union
MMS	Multimedia message service
NBN	National Broadband Network
NCAS	National Centre for Australian Studies
OII	Oxford Internet Institute
OSI	Online status indicators
PC	Personal computer
Pew Internet	Pew Internet & American Life Project
SMS	Short message service
SPSS	Statistical Product and Service Solutions
VoBB	Voice over Broadband
VoIP	Voice over Internet Protocol
VCR	Video Cassette Recorder

Published Material

Some of the material included in this thesis has been published in conference proceedings and journals during my candidature. These publications though not extracted verbatim, draw upon material and ideas presented throughout the following. These publications include:

Rickard, S 2011, 'The new Aussie wireless hotspot - Home: End user investigations into wireless communications technologies within the home' *Australian & New Zealand Communication Association (ANZCA) Conference Proceedings*, July 2011 [URL: http://www.anzca.net/conferences/anzca11-proceedings.html](http://www.anzca.net/conferences/anzca11-proceedings.html)

Rickard, S 2009, 'Are you there?': Encouraging users to move from peer-to-peer to voice over broadband', *Telecommunications Journal of Australia* 59 (3): 42.1-42.7. Available from: <http://tja.org.au>. DOI: <http://dx.doi.org/10.2104/tja09042>

Rickard, S 2006, 'Colour My World. The Consumption Junction Meets D Digital World', *Australian & New Zealand Communication Association (ANZCA) Conference Proceedings*, Adelaide, July 2006 URL: http://www.adelaide.edu.au/anzca2006/conf_proceedings/rickard_scott_digital_convergence.pdf

List of Figures and Tables

Figure 5.1: Percentage of respondents using particular digital technologies.	106
Figure 5.2: Percentage of respondents using Internet access by type of connection in the home..	107
Figure 5.3: Type of device used by middle adults for familial connection.	117
Figure 5.4: Percentage of digital technologies used by respondents to connect to family living nearby.....	119
Figure 5.5: Percentage of digital technologies used by respondents to connect with family living 'far away'	120
Figure 5.6: Percentage of respondents family members living overseas.....	121
Figure 5.7: Family Living Overseas by middle adults as parents or not	123
Figure 5.8: Percentage of respondents who keep connected with specific family members	124
Figure 5.9: Percentage of respondents who use these specific digital technologies to keep in contact with their most contacted family member	126
Figure 5.10: Middle adults and the older familial generations	127
Figure 5.11: Middle adults and the younger familial generations.....	128
Figure 5.12: Middle adults and their contemporary familial generation.....	128
Figure 5.13: Percentage of methods that respondents use to connect as a family group.....	131
Table 6.1: The top three topics coded from the interview transcripts	136
Table 6.2: Details of interviewees who discuss digital media literacy in their interviews	137
Table 6.3: Details of interviewees who discuss mobile telephony in their interviews.....	138
Table 6.4: Details of interviewees who discuss Skype in their interviews	139
Figure 14: Who do you ask for help with technology?.....	164
Figure 15: Yahoo Chat OSI	222
Figure 16: Skype OSI	222

Section 1: Theoretical frameworks, Literature Review and Methodology

CHAPTER 1: Introduction

In 2004 I posed an icebreaking question ‘How do you use your mobile phone?’, to some new postgraduate students. One student replied that she took a photograph every day with her phone and sent it with a short text message to her father. As the student lived away from the family home, daily text messages helped her father feel connected with her day-to-day life until they next met face-to-face. This small interaction, performed everyday between the daughter and her father, is typical of the way family members use personal communication technologies to keep connected. Phone calls, texts, emails, instant messages, Skype video calls, cards, and photographs all form part of everyday communication practice.

Until 2005 there was little research showing how families were keeping in touch using digital communication technologies such as the mobile phone. While evidence of peer-to-peer communication using mobile phones through SMS has significantly increased, there has been no commensurate increase in research relating to the adoption and use of digital communication technologies specifically by families. This could be a reflection of the slow diffusion of digital communication technologies such as the mobile phone through familial generations (ACMA, 2007).

In the early 2000s, computing rather than mobile telephony was the focus of research into family use of digital communication technologies. Researchers with an interest in the digital divide investigated whether Australian families had both the access and the necessary skills to utilise these technologies (Meredyth and Hopkins et al., 2002; MMV, 2004a; MMV, 2004b).

This was very much in the era of the digital divide when much research focused on whether people had access or not. Discussions focused on inclusion, posing questions over who had access and how could access be improved for those without (Norris, 2001). It was not, however, an era for exploring how people were using

technology for communication particularly with family. It was an era about access and skill not communication itself.

Once the adoption of desktop computers into the home became more common, the family home provided new avenues for research such as the location of the computer within the home, who used it and when (referred to as hierarchies of use) (Green, Holloway and Quin, 2004; Lally, 2002; Ling and Thrane, 2001; Ling and Thrane, 2002). In contrast to the dearth of literature about family use was the rush to understand how in the broader community people were using digital technology to connect with others. Revealing how people were communicating with those geographically distant sparked debates about the 'death of distance' (Barr, 2000). Others focused on how to build a sense of community online, inspired through projects such as The Well mentioned in Rheingold's 1993 book *The Virtual Community*. The communities built and investigated could be physical communities such as a housing estate (Hampton, 2001; Wellman and Hampton, 1999), large cities represented digitally (Rickard, 2003; Schuler, 2001), or virtual communities (Rheingold, 1993).

However, little interest was shown by researchers in the banal aspects of everyday life, including how people may want to make the best use of new technologies to keep connected with their family. It could be argued that families are the most important community and that there is value in understanding how this community keeps connected. In an increasingly geographically mobile population, there is a reliance on digital technologies to reduce the distance and increase the sense of connection. So here was a gap in the research that could be investigated.

This gap provided an avenue to explore how families communicate using digital communication technologies, the focus of this thesis.

In the field of communications in the 1990s most research investigated family in the context of the traditional family unit: mum, dad, and the children. The seminal research into media use by families was undertaken by Brunel University scholars

Roger Silverstone, Eric Hirsch, David Morley, and Sonia Livingstone (Hirsch, 1994). Their research was conducted in participants' homes but did not address families in relation to life-stage and more significantly, in relation to familial generation.

Two studies in the early 2000s investigated communication across family generations. Lim and Tan in their Singaporean study of media domestication within family households revealed some differentiating factors between grandparents and younger family members who all lived in the same household (2003). Haddon in his English study identified adoption practices in relation to the young elderly and single parents (2000). However, these studies, like the Brunel study, did not investigate extended families and their use of communication technologies, but rather focused on households. Households in this sense were considered as a family living in the same dwelling, yet families also live beyond this physical boundary and often live in multiple homes. This gap in the literature provided a unique opportunity to explore familial communication across the extended family, where the extended family includes multiple generations such as youth, middle adults and older adults.

At the beginning of this journey, and written up as Chapter 2 of this thesis, is a consideration of the context of 'family' drawing on the field of family and intergenerational studies. It is important that the field of communication studies moves beyond the media portrayal of the stereotypical suburban nuclear family with two parents and two children, and investigates people as part of their family of origin (Pahl and Spencer, 2004). Families of origin are those into which people are born, not the family which they create. Approaching the research from the perspective of families of origin is new. Previous research such as that conducted by the Brunel University team was among created families rather than families of origin. This is an important differentiating point between this study and others – for example, Silverstone et. al., (Hirsch, Silverstone and Morely, 1994), and Lim and Tan (2003).

In the field of Family and Intergenerational Studies, research focuses on the importance of generations within a family, and the parts that life-stage, life-cycle,

and the role of position within a family can play (Mphande, 2004). Generations within Family and Intergenerational Studies are based typically on three generations; 'youth', 'middle', and 'elderly' (Mphande, 2004). Youth are the young, unmarried family members. The middle adults are sandwiched in between, they are settled and building families of their own. The elderly or 'older adults' are the family members who bear the responsibility of being grandparents. So, as family members move through the life cycle, their responsibilities to each other change (Whitchurch and Dickson, 1999). The middle generation of adults is juggling responsibility as parents to one generation (youth), and at the same time adapting to the changing needs of their own parents (older adults). How may this impact on the way the different generations communicate especially in an era when communication practice itself is constantly changing and evolving? This led to the key research question: 'How are the three generations within a family, "youth", "middle" and "older adult", communicating using digital technology?

The choice of communication technologies forms part of our communication practice as we can only communicate with others through devices that enable connectivity with their devices. So if our preferred method of communication is telephone, then both parties must have access to a telephone in order to communicate with other family members. For example, early take up of some technologies such as the video phone was flawed because there were too few people with the technology (Kraut and Fish, 1995; Sterne, 2003). The same can and does happen in families. As people age they are less likely to adopt new technology, as it may be hard to understand the purpose in obtaining a new technology if patterns of communication using a particular device are well established (Ling, 2007; Nafus and Tracey, 2002; Lim and Tan, 2003). Among one family interviewed for this study, only two family members could use a video phone, as the third family member, their mother, did not have a phone or plan that supported that technology.

Along with being part of a family, the majority of Australians have somewhere to live – a home. While we are each part of a family, few of us live our entire lives with the family into which we were born, our family of origin (Pahl and Spencer, 2004). At

different stages in our life we move away from, and sometimes back towards our family. We connect and disconnect physically and virtually. At different points in the life cycle, or during particular life stages, our place of living, our dwelling, our home, shapes and reshapes as we live (King, 2004). We may live in university accommodation while we study, a share house while we are young and single, and then later as we settle down as adults we may buy our own home, to share with the family we create (ABS, 2007).

Chapter 3 'Dwelling in Connected Space', blends the home, our dwelling, with the notion of living with our increasing levels of technology. Technology is present in the home in the guise of devices to help with domestic work, such as whitegoods: devices to entertain us, such as television, music and games: and devices for communication purposes such as telephones and computers. Chapter 3 frames digital technology consumption and domestication. It discusses several theories related to technology and consumption, such as the Social Construction of Technology (SCOT), Cowan's theory of the consumption junction, Roger's theory of diffusion, Wyatt's theory of non-use and the domestication framework by Brunel. This chapter also outlines five stages in the process of objectification within domestication theory that emerge from communications literature (3.1.5): end users *disguise* their new technology, adopt *multiple* units, technology becomes *transparent*, technology becomes a *necessity*, and technology becomes *hidden* and/or *decorated*.

There has been a significant change in communication technologies since the Brunel study was conducted in the late 1980s. Dwelling in a domestic environment no longer means sharing our entertainment or communication technologies. Australians now live in an era that has moved from communal to private and portable. Morley and Silverstone identified the beginning of this transition in their study into families and their use of media within the home (1990). They noted the existence of multi-set television households predicting that this was the future (Morley and Silverstone, 1990, p.32). A decade later, Ling and Thrane noted in their research the beginning of a trend away from communal towards private and portable communication

technologies such as the telephone (2001, 2002). Australians of all ages and backgrounds are increasingly in possession of their own laptop, mobile phone and Internet connection (Thom, 2010). Australian youth from tween age are likely to be in ownership of a mobile phone (ACMA, 2009, p. 7). This change is discussed in the chapter in relation to Gergen's contention of progressive privatisation (3.3) and Schroeder's contention of multimodal connectedness (3.4) (Gergen, 2002; Schroeder, 2010).

For most Australians living with technology is now about communicating in a connected digital familial space that continues irrespective of time and spatial constraints. People can now SMS or Facebook someone who is located in the next room rather than physically get up, go and talk with them. Children can connect with their parents or, most importantly to some, their grandparents, through their individual devices (Makice, 2010). Networks are now individual with direct contact between family members rather than a network fixed around a central hub, as offered by the fixed landline telephone of the past.

In order to understand the broader cultural context of the Australian family in which this thesis is situated. Chapter 3 includes a framing of the key communications literature in relation to digital technologies. The framework is organised into three groups of literature: the Digital Divide and social impact studies (3.2.1.), everyday life (3.2.2.), and broadband connectivity (3.2.3.).

Chapter 4 discusses the ethnographic approach used for data collection. A multiple method approach was selected to investigate the key research question 'How are the three generations within a family, "youth", "middle" and "older adult", communicating using digital technology?' A combination of an online questionnaire and face-to-face interviews with volunteer participants provides a snapshot of how Australian family members are communicating using digital technology. It is important to note here that it was not possible in the data collection process to interview three generations from within a single family as there was an ethics restriction placed on the study requiring participants to be over the age of 18,

effectively limiting the scope of the direct research to the middle and older generations. As a result, the majority of the participants interviewed were from the middle adult generation. However a large response from this group provided a valuable insight into a group repeatedly overlooked in the field of Communications. It is at this stage that the focus of the research question altered from 'How are the three generations within a family, "youth", "middle" and "older adult", communicating using digital technology?' to 'How are the adult generations within a family communicating using digital communication technologies?'. The adult generations within this thesis refer to the middle and older adults who participated in the online questionnaire and interviews.

Chapter 5 'Keeping Connected As Families', is the first chapter analysing the results of the data from the online questionnaire. The first section provides an overview of respondent demographics for the main respondent group – the middle adults. The large response from the middle adults provided an opportunity to focus the investigation on this group rather than the frequently researched groups of youth and the elderly. This thesis provides a voice for this hidden familial group of middle adults and their generational communications, particularly with their older adult parents.

Chapter 6 introduces the eight middle adult and three older adult interviewees in relation to their personal communication adoption experiences. The beginning of the chapter presents the results of the coded analysis of the in-depth and unstructured interviews. During the coding process, it became apparent that each interviewee warmed to a particular technology and Chapter 6 investigates the diversity of their adoption and practices through the use of vignettes. In terms of technology, the focus of this chapter is interviewee adoption of the Internet, computers and mobile phones. The interviewee insights also provided valuable context for the two following results chapters on digital media literacy and Skype.

A challenge within families is the variable digital literacy levels of individual family members. Older family members may not be as adept with a variety of devices as

younger family members, and skill differences may impact on the methods used to communicate between family members. Chapter 7, 'Digital Media Literacy', discusses issues in relation to digital media literacy that arose during the face-to-face interviews such as the increasing amount of work associated with digital technology. 'Digital housekeeping' is a form of work introduced by the increasing amount of digital technology within the home and the need to connect and maintain it (Grinter et al., 2009). Like the different devices that people choose to have within their home, the network connecting the devices is as unique as the family itself (Grinter et al., 2009). When the demands of maintaining the devices and network increase beyond the capabilities of the household, then outside services need to be brought in and this in itself can cause changes and problems, requiring further decisions within the household. This is particularly difficult for people living in regional, rural and remote communities as there are often few people able to provide such services (Bell, 2009, p. 29).

Digital housekeeping is an issue yet to be raised by communication researchers, so instead this thesis draws on the work of Human Computer Interaction (HCI) researchers to provide an interdisciplinary perspective of this aspect. Including HCI research is important because it considers the broader implications of technology adoption and acknowledges there is a particular need to explore 'the patterns of action and interaction that actually surround a system' (Schwartz Cowan, 1999). When discussing generations within a family, these patterns of action and interaction form part of the discussion. In relation to digital housekeeping, the generations rely on each other for information and assistance and this generally takes the form of sharing knowledge to purchase and maintain their devices.

During the thematic interview transcript analysis it became apparent that part of the communication practice between middle adults and their older adult parents included negotiations involving communication technologies. Each family negotiated in relation to the purchase, set-up and installation of technology, as well as ongoing task assistance. In most cases negotiations that involved technology were occurring between middle adults and older adults. Chapter 7 considers how middle adults in

this study are shouldering a greater proportion of the digital housekeeping of their parents, the older adults and all the additional responsibility and commitment that entails.

In the final chapter of results, Chapter 8, the domestication of the web based service Skype is considered. Skype is a low-cost ISP independent web based telephony service with the flexibility to be used through computers, landline phones, or mobile phones. During the data collection period in 2007, few Australians were using the web-based application. The Skype interviewees include six middle adults and one older adult. Although Skype is used by the interviewees as a video call service, familiar telephony themes such as intimacy, absent presence and immediacy arose during the interviews in relation to Skype. New themes, including rising rates of interruption and multi-tasking - particularly by the middle adults - highlighted the disconnecting or disruptive nature of the new application. Schegloff and Rakow both contend that telephone conversations have a particular structure, one that involves 'initiating a conversation, making oneself understood in the absence of multiple cues, listening carefully, coordinating turn taking, and closing the conversation (Rakow, 1992, p. 43; Schegloff, 2002). The results indicate that irrespective of whether the call is voice or video, some interviewees - particularly older adults - prefer the traditional practices and recoil at the disconnecting or disruptive nature of new applications.

However, the advantage of being able to see each other through the use of webcams added to the allure of Skype for the interviewees, as it increased their sense of social presence (Tu and McIssac, 2002). The social presence offered by Skype is important to those who are geographically separated from family members and otherwise reliant only on text or voice communication irrespective of the familial generation. Webcams and Skype enabled a greater depth of interaction between the middle adults and older adults on a day-to-day level in relation to the visual sharing of living spaces, and by providing more intimacy as they could hear as well as see their loved ones. So in contrast to the disruptive and disconnecting nature reported by some,

others reported on the positive benefits such as increased caregiving and remote mothering possibilities.

Finally, the thesis concludes with an overview of the results of this research together with some recommendations for future research with middle adults and older adults. In particular, future research recommendations a focus on domestic networking, digital media literacy, and multi-tasking.

CHAPTER 2: Families and digital communication technologies

Kids have confidence with technology but parents can be afraid to try new things. If you just jump into it it usually works. (Valent, 2011).

2.0. Introduction

As Silverstone suggested nearly 20 years ago, few contemporary nuclear families fit the twentieth-century image of collective viewing around a single television set or listening to a radio in the lounge room (Silverstone, 1994). Rethink the image. Imagine someone at home in their bedroom, surrounded by their multiple Internet-enabled devices: mobile phone, iPod, laptop, games device, and television set (Thom, 2010). Homes within Australia now boast multiple television sets, computers and other digital devices scattered throughout the home (ACMA, 2009, p. 7). Digital technology is now in the possession of the individual with 54% of Australian school-aged children between the ages of eight and 17 with their own mobile phone (ACMA, 2009, p. 14).

Beyond the nuclear unit of the family, a larger unit of extended family exists. The extended family comprises the respective parents of the 'mother' and 'father' as well as familial siblings, aunts and uncles, and cousins (Tee, Brush and Inkpen, 2009). Generational communication in this context explores the communication practice between the different generations within a family: how the younger generations communicate with their parents, and their grandparents; how the middle generation of adults communicate with their own parents, the 'older adults', as well as their own children the 'youth'; and how the 'older adults' communicate with their children the 'adults' and their grandchildren the 'youth'.

This chapter begins by defining the terms generation (2.1) and family (2.2) and reviews the literature surrounding the different generations in relation to family and

their adoption of digital technologies. The review provides a framework for thinking about family studies beyond generic family studies and includes other studies such as household studies (2.3.1) and intra- and inter-generational studies (2.3.2). Later in the chapter there is a discussion about defining the individual generations of family – for example, older family members as ‘older adults’ (2.4) and the invisible middle generation of adults (2.5).

2.1. Defining ‘generational communication’

The common understanding applied to the word ‘intergenerational’ in papers from the fields of media and communication, is communication *between* generations. According to Hanks and Ponzetti from the field of Family and Intergenerational Studies, however, ‘intergenerational’ means communication that occurs between two generations of family where a generation has been skipped, for example between grandchildren and their grandparents (2004, p. 9). The common misconception and application of the word ‘intergenerational’ generally refers to *intra* rather than *inter* communication. Intra communication is between one generation and the next – that is, between children and their parents. This study will follow the definitions used by Hanks and Ponzetti (2004) and use the phrasing of ‘intra’ to refer to communication between generations and ‘inter’ to skip a generation.

Within the field of Family and Intergenerational studies the most common composition of family involves three generations. Mphande (2004) suggests that the average familial generational period is 25 to 30 years (p. 155). Examining generational communication within the context of family and within the structure of the life-cycle is particularly valid when we consider that each generation holds specific roles within the family. As an individual’s position within the life cycle changes, their position within the family may change, and of course with each transition, the needs of the family change (Whitchurch and Dickson, 1999). Elderly family members have always been looked upon as information resources in relation to relationships and family knowledge and are treated with respect because of that knowledge and life experience (Hanks and Ponzetti, 2004). In later life, some family

members develop an interest in the history of the family and this role is reflected outwardly in hobbies such as genealogy, which includes tasks and activities such as building a family photograph album, and collecting and writing a family history. Television shows like the BBC's *Who do you think you are?* broadcast here in Australia on channel SBS, highlight peoples' interest in their own family history. Documenting and discovering familial history becomes more important as we age, and older generations perform the important role of providing an understanding of our particular family's life over time (Hanks and Ponzetti, 2004, p. 6).

There is a flaw in Mphande's definition of familial generations. Young, childless and unmarried family members are considered to be 'youth'; those more settled and married with children are termed 'middle', and the older family members are called 'elderly' (Mphande, 2004). This way of defining the family appears to be idealized, in that not all family members reflect this clean definition. For example, it does not account for a group that could be defined as 'youth' but who are older in age than what would normally be considered youth. These individuals are also yet to have children or even to perhaps settle down with a partner. Within the life cycle of an Australian family, being a parent and accepting the responsibilities of child rearing, providing a home for children and spouse is seen as reaching maturity, the 'middle' part of the life cycle (Salt, 2007).

This group is likely to have always been present in society but are perhaps made more visible when key factors are removed. Their older age makes them seem less suitable to be placed within a category of 'youth', and yet they are still to take on what has been traditionally seen as the important role of parent. Salt contends that within Australian society this youthful group is a result of Generation X 'not wanting to be weighed down with a permanent partner and kids' (2007, p. 33).

The thesis considers how the adult generations within a family of 'middle' and 'older adults' are communicating using digital communication technologies. The research creates a matrix that features communication between mothers and daughters, mothers and sons, fathers and sons, and fathers and daughters. While older familial generations provide understanding about family history, multiple familial

generations provide context to daily interactions at the same historical time (Hanks and Ponzetti, 2004, p. 6).

2.2. Defining 'the family'

Examining communication practice from within the context of family involves the consideration of the life cycle and life stages of the individual family members. The family life cycle supports three generations: youth, middle, and elderly (Mphande, 2004). Greater complexity is then added by considering the individual family members position within the life cycle and the roles that accompany that position. The term 'family' is defined by the field of Family and Intergenerational Studies as 'consist(ing) of two or more individuals of varying ages who are linked together over time through a matrix of intimate relationships' (Hanks and Ponzetti, 2004, p. 6).

Family composition and structure should not be confused with households. Families exist separate to the dwelling they choose to live in. Households are the physical shelter or dwelling in which families live (King, 2004). Few Australian family households fit the nuclear model of mum, dad and their children any longer. Bernard Salt states that in 1991, 41% of Australian households comprised nuclear families and by 2001 barely one-third of households contained a traditional-styled family (2007, p. 32). Salt contends that this is a result of the different approaches to marriage and family adopted by later generations (2007, pp. 31–33). Contemporary models of family households contain single parents, blended families, families where parents work shifts in caring for their children, commuter couples, and families where one parent can be resident overseas while perhaps the mother and children are based in their home country (Hardhill and Green, 2003) or the mother could be working overseas leaving her family behind (Zainudeen, Iqbal and Samarajiva, 2010).

The family context investigated in this project is not simply about the families who live within the same dwelling. As families of origin as well as families who are created, the families participating in this study are likely to be living in different households because of their generational life stages. In general, Australian families do not live like those in other cultures with multigenerational households under a single roof. The context of this study is the family irrespective of where they live, and

Australian families live apart during the life cycle often spread across a suburb, city, state or the nation, living in a variety of different environments (Ben-Harusen, 2010). While the ABS states that there is a general trend during the early part of this decade for 45–49% of all Australian adult children to still live at home (2008, p. 11), their grandparents are not likely to be living in the same dwelling. The focus of this thesis is on the generations and how they communicate with each other using digital technologies. It is not on the dwelling nor on the families alone.

2.3. Framing families in contemporary research

As a way of presenting the existing research about families the research is organised into five groups: 1) Household studies - family studies that relate to a family living in the one household; 2) Intra/inter-generational studies - studies that relate to generational communication between identified familial generations; 3) Singular studies – studies on single familial generations that are household based and where the focus of the research is about ICT impact on family life; 4) Nested studies - studies in which the familial group is part of the active discussion rather than part of the group being investigated; 5) Peer studies – studies where the emphasis is not on the individual as part of a family but rather as a part of a peer group - for example gender based research.

Some of the studies cited below were used to inform the initial scope of the investigations of this thesis (more details of which are discussed in Chapter 4) and others have assisted in the results discussion in later chapters of this thesis.

2.3.1. Household studies

Household studies relate to research conducted into families that reside in a single household and where the focus of the research is on media and ICT impact on family life. Brunel University's research into family use of media by 20 English families drawn from the metropolitan area of London and the provincial town of Slough is a well-known example of a household study (Silverstone, Hirsch and Morely, 1991, p. 209). Their study revealed that media formed a key part of the moral economy of the household. Unlike many studies of the era, the data collection methods for the study were extensive and included a preliminary interview, participant observation, time-

use diary, household maps, network diagrams, family photograph albums, technology list, a personal-construct interview, patterns of media use, analysis of household income and expenditure, and a final interview (Silverstone, Hirsch and Morely, 1991, pp. 212–221). The Brunel ethnography is discussed further in Chapter 4 as part of the methodology for this project (4.3.2).

The majority of other household studies noted here were smaller in scale, either with fewer families participating or with less complex data-collection methods, than the Brunel University study. Caron and Caronia for instance investigated ‘the subjective construction of the meaning people give to technologies and their uses within the family’ (2001, p. 38). They interviewed nine families within their homes and there were three different family profiles: three childless couples under 35, three families with at least one child aged over eight and three families with teenagers or young adults (Caron and Caronia, 2001, p. 40). Ann Gray interviewed 30 women about the use of the video cassette recorder (VCR) within their homes, investigating not only the gendered meanings of household technologies but also the technological competency of household inhabitants (1995). Gray’s study is of particular use in this thesis as technical competencies in relation to gender appear in the results chapters, particularly in relation to digital media literacy between the generations to be discussed in Chapter 7 below.

Another study that focuses primarily on nuclear families and their use of computers is the 2004 work by Green, Holloway and Quin. Their chapter ‘@ home Australian family life and the Internet’ reported on an ARC Discovery Grant ‘Family Internet: theorising domestic Internet consumption, production and use within Australian families’ that explored Internet use within Australian homes by school-aged children (2004, p. 89). The study revealed that Australian parents have ‘developed a variety of means through which they manage any perceived risks’ to their children using the Internet (Green, Holloway and Quin, 2004, p. 98).

Elaine Lally’s work also investigated the use of computers within the homes of 31 Australian families from the western suburbs of Sydney in 1996, exploring the social life of the computer within the context of ownership and domestic life (2002). In

common with other studies such as Caron and Caronia, the household compositions in this study were not all nuclear (2001). While all the inhabitants of each household were considered family, their compositions varied.

Ling's extensive research from the 1990s onwards, investigated multiple frameworks - from entire families to individual familial generations and across age generations in relation to particular technologies such as the mobile phone. Of particular relevance to this thesis is Ling's early work with Thrane investigating family household use of domestic technologies such as the television and the Internet (2001, 2002). Ling and Thrane offer insights into the placement of technology within the home and the use of temporary communication spaces known as 'personal spheres', clearly demonstrating the need for private places to talk facilitated by mobile communication technologies (2001, p. 8). Ling's later work investigated single familial generations such as teenagers' use of mobile phones, as well as elderly use of mobile phones - or rather, why they are less likely to use one (Ling, 2007; Ling and Yttri, 2006).

Lim and Tan in contrast to Ling held semi-structured interviews in the early 2000s with two and if possible three, familial generations of Singaporean middle-and upper middle-class families (2003). Their investigation explored the ways in which the adoption of new ICTs transformed relationships, communication patterns, and leisure patterns within multi-generational family households (Lim and Tan 2003, p. 98). Their investigations also included where possible, interviews with the young elderly family members (those over 60) to gauge issues relating the socio-digital divide.

2.3.2. Intra and inter-generational studies

There is little intra-or inter-generational research from a familial perspective. Recent work in Australia includes research being conducted by Julie Dare on the use of communication technologies by mothers and daughters for kin-keeping and communication (2008). Dare contends that new Internet technologies assist in building stronger and closer relationships between mothers and daughters (2008).

Haddon and Vincent analysed telephony case studies of negotiation between three sets of parents and their teenage children (2004). The method included asking participants to complete a diary of their telecommunications (both fixed and mobile) use for a day and participate in an interview afterwards. The paper focuses on the way individuals select a method of communication depending on costs, location and time of day.

Wilding investigated the everyday communication and care-giving practices occurring between family members and reported that 'The families I discuss are not so concerned about negotiating human-machine hybrid states as they are about remembering birthdays and anniversaries' (2006, p. 126; 2009). Wilding's project had a transnational context and investigated how familial practices such as caregiving continued across geographic divides (Wilding, 2006; Wilding and Baldassar, 2009). Wilding's families comprised migrants and refugees living in Perth, Western Australia, and their parents resident in Ireland, Italy, the Netherlands, Singapore, New Zealand and Iran (2006, p. 128). Interviews were conducted in the migrants' and refugees' homes in Perth and then their parents' homes overseas. A mix of genders participated in the interviews. No other contemporary studies compare transnational families like Wilding. While Sawhney and Gomez's study asked participants about keeping connected with family overseas, the geographically separated family members were not part of the interview process (2000). In this thesis, family members living in Australia were asked how they conducted their relationships with overseas family members using digital technologies.

2.3.3. Singular studies

Singular studies relate to research conducted into single familial generations that are household based and where the focus of the research is on ICT impact on family life.

Dobashi's research into the use of ICTs by Japanese housewives is a good example of a singular study (2005). The research involved interviews with Japanese housewives from 20 households. This is a similar number to that of the Brunel study, and similarly the households were located in urban areas. In Dobashi's study the households were located in central Tokyo and the northern suburbs of Yokohama

(2005). Dobashi's study focused on a single group, housewives, and provides a useful insight into how housewives negotiate and micro-coordinate with other family members.

Another singular study with a focus on adoption practices of ICTs by US families is by Sawhney and Gomez (2000). Their study is important because it identifies women in their roles as both mothers and wives as the central communicators or hubs within the pilot families. Unlike most of the studies about families that focus on the young or the elderly, it is one of the few pieces of research that investigates an adult role within the family. The participants comprised 20 immigrant families from the local Cambridge community in the US who participated in questionnaires and interviews over a five-week period (Sawhney and Gomez, 2000, p. 1).

A third example of a singular study was undertaken by cultural and feminist geographer Gillian Rose. Rose interviewed 14 English women in relation to their individual and their families' use of digital cameras (2003; 2004). This study is important to this thesis because it contributes to our understanding that storage, distribution, and display of photographs is important to families. These three issues are equally important irrespective of whether the photographs are shot on analog or digital cameras. It also confirmed that for these families at least, domestic photography work is gendered. In the main, both genders of the household shot the photographs but it was the women who were responsible for the storage, distribution, and display (Rose, 2003, p. 8).

As a later component to the Brunel studies, Haddon and Silverstone conducted investigations into teleworkers, single parents and the young elderly - in relation to the factors for non-adoption of ICTs (Haddon, 2000). For this study, their investigations into the two British familial generations of single parents and the young elderly are the most relevant. The focus on non-adoption factors provided the basis for this singular study. The in-depth interviews and time budget diaries were completed for 20 households in the mid-1990s along with Roger Silverstone (Haddon, 2000).

In other projects Haddon has investigated a single technology – for example, a mobile phone - in relation to a single familial generation such as young people in order to understand how their adoption of the mobile phone affects their social networks (2007). Others such as Lloyd and Noble are mentioned in later chapters of this thesis because they too have investigated youth and their adoption of the mobile phone (Lloyd, 2007; Noble, 2008). However Tutt's study of teens' use of the mobile phone within the domestic space of home offers a different perspective in relation to location-based studies of generational mobile telephony use (2005). Tutt used video ethnography as his method of data collection. Like Haddon, Russo Lemor studied single-parent households (Haddon, 2000; Russo Lemor, 2006). In Lemor's singular study, the households comprised six single fathers and 16 single mothers where their children lived with them at least 40% of the time (2006, p. 169). Again data was collected using interviews.

A singular study conducted by Rich Ling explored the way in which elderly people used their mobile phone especially in relation to texting (Ling, 2007). For this study Ling drew on data collected as part of a national Norwegian survey held in 2005 with 1000 randomly selected participants (Ling, 2007, p. 1). Wong's study of the elderly residents of a Hong Kong nursing home is not too dissimilar to Ling's, in that Wong also wanted to increase understanding of the elderly's adoption and usage practices of the mobile phone (2006). In his study, Wong questioned whether the elderly could adapt to new practices even if they had not used the technology before. His conclusion was that given enough incentive, people learn to use new technologies even the elderly (2006).

2.3.4. Nested studies

Nested studies are those where conclusions are drawn not from the main focus of the study but rather a topic such as work/life balance that may be relevant to families. For example, Sciriha draws her respondent data from a large independent survey of Maltese people where the respondent age group ranged beyond the teenagers she was interested in investigating (2006).

Judy Wajcman's (2008) research took place from a quantitative sociological perspective and her more recent work investigates the use of technology, in particular the mobile phone in the context of work/life balance. In this particular study, Wajcman and others used a data collection agency to source 'panellists and additional household members' to complete an online survey (Wajcman, Bittman and Brown, 2009, p. 638). The total sample was 1358 individuals from 845 households.

Kaare et al., by contrast, used a multi-method approach of a quantitative survey and qualitative interviews when they conducted research project into Norwegian teens' adoption of mobile phones (Kaare et al., 2007). Their study provided 'a sketch of connections between the nature of the children's social relationships, mediated content and the various means of communication employed' (2007, p. 603). While the study's singular focus was youth, the results revealed that the content of the communication contained ways of 'seeking to establish contact with others' which included their parents and peers (p. 610). Kaare et al. (2007) drew on the content provided by the teens to draw conclusions about their interactions with family members.

Sciriha's study focused on teenagers' use of mobile phones in Malta (2006). In this instance it can be viewed as a nested study, because the data collection method was a questionnaire from a sample of 500 residents aged between 14 and 17 years of age. Along with Wajcman's, it is one of the few quantitative studies in the literature reviewed, aside from government documents. It is included here as part of the nested studies as the discussion of results focuses on the negotiations that occur between parents and their children as much as the communication practices between the teens themselves. Interestingly, the teens in Malta use the same practices as their US or Australian counterparts to delay contact with their parents. Maltese teens, like many others, blame a dead phone battery or that it was switched off phone for not contacting their parents or responding to calls (Sciriha, 2006, p. 174).

2.3.5. Peer studies

Peer studies is the most popular genre of communication research studies. The most studies most relevant to this thesis are those that focus on a particular familial generation - middle adults or older adults. Inevitably there will be some cross-over between the study framework, so for example, Sciriha's (2006) study of Maltese teenagers could also be included in this section.

Singh undertook a qualitative study interviewing 30 middle-income women with home Internet access in urban and rural areas of Australia. The aim was to explore women's perspectives and experiences of the Internet (2001, p. 397). Singh's study adds to the valuable gender-based peer studies that occurred in the early 1990s which focused on mobile telephony, landline-based telephony, and women and their use of computers (Gray, 1995; Rakow, 1992; Rakow and Navarro, 1993; Moyal, 1995). For instance, Rakow and Navarro undertook an early investigation into women and their use of the mobile phone and discovered that women used the mobile phone to 'manage creatively their responsibilities for home and children' whereas their husbands viewed the mobile phone as a way of providing protection (1993, p. 144). The concept of micro-managing home and children was later replicated in the Japanese study conducted by Dobashi (2005) and mentioned earlier in this chapter (2.3.3.).

Andrew similarly explored rural and regional Australian women's experiences of Internet connectivity a decade later (2004). Her findings indicated that women in regional and rural Australia used the Internet for multiple reasons including business- and education-related activities and for keeping connected with friends and family. In contrast to most of the studies discussed in this chapter, Andrew adopted a quantitative approach by using a questionnaire for data collection.

2.4. The generation gap

There is a perceived generation gap between the familial generations in relation to their adoption and practices of digital technologies. Perceptions of how the different familial generations adopt and use technology has resulted in positive descriptive labels being applied to youth, for example 'digital natives'. In fact many of the early studies focused on what was seen as the exceptional abilities of this generation's

response to digital technologies. Researchers noted the younger generation's abilities to engage with technology on both a conceptual level and physical level. Youth's use and relationship with technology is the most documented of the three familial generational groups. It is accepted that like all previous generations they take up and use all forms of mediated technology once they gain access. More recent studies have noted youth's physicality with the devices - for example, the manual dexterity shown with their thumbs when texting (Bell, 2006; Hjorth, 2009; Plant, 2002): 'It is a common sight to see teenagers typing away furiously on their mobiles' (Grinter and Eldridge, 2001). Negative adoption terms like 'exclusion', however, are often applied to older users of technology. In general, older generations are perceived as being less able to adapt, access, or adopt digital technology (Ling, 2008; Nafus and Tracey, 2002; Wong, 2006). It has also been well documented that older people felt they could not use mobile phones because of the common design feature of small keypads and small screens (Ling, 2008; NovitaTech, 2007). Physical elements of technology were presented as barriers to adoption for older adults by many researchers (Dickinson, 2003; Ling, 2007; 2008). Older adults are also more likely to express indifference to technology use, unlike youth (Nafus and Tracey, 2002). Older adult's indifference and unwillingness to adopt new technologies may have been the case in the late 1990s and early 2000s, but during the last decade the situation has changed. Within the last decade, Australian governments at all levels - local, state and federal - have adopted policies and put into place education and access programs such as Victoria's Connected Communities (MMV 2004a, 2004b) initiative, to ensure that the older generations are not left behind. The rationale may have been to ensure that they are able to fulfil everyday actions like banking, shopping and paying their bills, but also it became important that older generations were included for reasons of social inclusion (Czaja and Lee, 2007). As a way of ensuring that older Australians remain connected to family and friends, Telstra ran a Connected Seniors education program in conjunction with community groups in order for older people to learn how to use mobile phones as well as the Internet (Telstra, 2008; 2009).

Now a decade on, researchers are beginning to discover that the digital generation is not as adept with technology as first thought and that their perceived speed to adopt new technology was perhaps showcasing the talents of early adopters rather than the majority (Green, Holloway and Quin, 2004).

2.4.1. Youth and older adults

A generation is but 'a single stage in a family history' that results in a generational gap between youth and older adults because of a difference in attitude and experience (Mphande, 2004, p. 155). This gap is a popular point of investigation in studies in relation to intergenerational communication. Youth and older adults are often perceived to have oppositional positions in relation to technology providing a good contrast for research. This oppositional position, it could be argued, can be observed in the nature of how the studies are conducted. The majority of youth research focuses on their positive utilisation of technologies, whereas the majority of research conducted into older-adult usage of technology takes the negative position of their lack of skills with and knowledge about technology. Wong's (2006) study into the adoption and usage of mobile phones among the elderly residents of a retirement home in Hong Kong is one of the few exceptions. It takes a positive position in describing how some elderly users of mobile phones have adopted the practice in order to maintain private contact with family and friends since phones in the retirement home are communal.

There are only a few studies that juxtapose youth against older generations. Pratt et al.'s study of 'Interrogative Strategies and Information Exchange in Computer-Mediated Communication', while purporting to be intergenerational was simply a construction between e-pals of seniors and youth previously unknown to each other (1999). There were no intra-or inter-generational familial elements involved in their research. The emphasis on Pratt's study was on whether the older adults were able to learn from youth. In Australia, McLaren and Zappala discovered in the early 2000s that retaining youth in rural and regional areas encouraged older people to learn about technology (2002). In contrast to the Pratt study, McLaren and Zappala's study was investigated from a familial perspective. Their conclusion was that a youthful presence kept older people energised and keen to learn new skills. There is a unique

bond formed between grandchildren and their grandparents, and Hank and Ponzetti (2004) contend that 'Generational processes influence family members across their entire life span. Cross-generational linkages are essential for both personal and family connectedness and continuity.' (Hank and Ponzetti, 2004, p. 6).

Williams et al. (1997) examined communication practice in relation to the intergenerational divide. In contrast to Hank and Ponzetti's study, the participants in Williams study were known to each other, but were not family. The study participants were asked for their 'perceptions' and no active communication practice was measured (Williams et al., 1997). Because the participants were not family, the study does not produce results that are beneficial to familial generation studies. Another important aspect attached to the generation gap is the perceived generational attitudes and approaches to technology, because the gap has resulted in different generations adopting and bonding with different technologies simply because of their exposure to that stage of technological development (Lim and Tan, 2003).

2.4.2 Defining 'older adult': separating the young elderly from the older elderly.

The term 'elderly' is used to refer to older adults in our society and is used more to define their age than position in the life cycle. There is a general perception that the elderly within our society are unable to take on new technologies, especially digital technology such as mobile phones (Ling, 2007; Lim and Tan, 2003; Nafus and Tracey, 2002; Wong, 2006). Australian social commentator Hugh Mackay contends that older Australians are living in an era 'apparently obsessed with youth' and are regarded 'as being too inflexible to adapt to new ways of doing things' (2008, p. 90). Yet there is evidence within communication studies, such as Wong's research into the adoption of the mobile phone by Hong Kong nursing-home residents, that this is not the case (2006). Participants in Wong's study were able to be taught how to use a mobile phone as they were keen to keep in contact with family and friends through a personal rather than communal phone (2006). Some such as Ling suggest that in order to avoid this misconception, this group should be separated according to age, into 'young elderly' and 'older elderly' (Ling 2003, p. 95). Otherwise a catchall title 'elderly' may encompass a group whose age can range from around 50 years of age

until 90 years (Lim and Tan, 2003; Williams et al., 1997). No other familial generation is likely to spread across the decades in such a way. This is largely because of the increasing longevity of our life spans and the increasing age at which we give birth. Our ability to reach the fourth generation is always determined by the younger generation. We do not reach the next generational level until the youth within our family settle and give birth. If at that point there are three existing generations with a new birth providing a fourth, then the term 'elderly' is perhaps more applicable. This reduces the age range in the group termed 'elderly' and provides room for a category called 'older adult'.

The term 'older adult' is used infrequently in media and communications literature but is perhaps a more appropriate term for those beyond the middle stage in the life cycle but not far enough along the life span to be called elderly. Separating the young elderly from the older elderly caters for the fourth generation of family and offers flexibility in providing further definition for categorisation. In this thesis, the term older adult is used in place of young elderly because it was the preference of older participants in the pilot online questionnaire; these participants objected to the use of the term 'elderly' as they felt at around 60 years of age too young to be called that. It is acknowledged that older adults may be at a different life stage than the elderly (Williams et al., 1997). Older adults are most likely to be physically and socially active, and busy participating in post-employment activities such as travelling, looking after grandchildren, and hobbies. They may be viewed in marketing terms as the 'grey nomads' (Salt, 2007, p. 24) and when using the Internet as 'silver surfers' (ABC, 2008).

Elderly family members can also be defined by life stage. So, while they are the third generation in families they often live differently to older adults. For the elderly there is often less contact with family and friends as their ability to move around to visit people is reduced (King, 2004). Their world is often reduced to what they watch on the television, listen to on the radio and can view out of the window at home (Blunt and Dowling, 2006; Wada and Shibata, 2008). 'Since many people are increasingly isolated as they age, and tend to spend more time in the home than younger age

groups, the stability of the home environment is of particular importance’ (Dickinson, 2003, p. 2).

2.4.3 Adults as the invisible middle generation

While the most significant generation gap lies between young adults and older adults, within that gap lies a second generation gap between youth and their parents, the middle adults. The middle generation of adults is invisible in the sense that little research is conducted into their use of technology within a familial context. It is particularly the case in relation to communications research, in which little research is undertaken into adult use unless it is in relation to their role as caregivers. Even then, most caregiving research focuses on their role as parents to youth.

The framing of research involving the adult familial generation generally has a particular focus such as the technology itself, or it is gender related or take into consideration the daily interactions that occur between youth and their adult parents (Ling, 2007; Rakow, 1992; Sciriha, 2006; Yarosh et al., 2009). Few communication studies explore the familial role in communication undertaken by adults in relation to the caregiving they provide to their parents, the older adults. Yet researchers recognise that this occurs. Stovall Hank and Ponzetti contend, ‘middle-aged children receive love and aid from their parents and can also help their parents as needed’ - an important aspect of which would be their communication needs (2004, pp. 7–8). This suggests a distinct gap in this area of communication research.

2.5. Conclusion

The central question in this thesis is ‘How are the adult generations within a family communicating using digital communication technologies?’ In this chapter four different familial generations were identified across the literature: youth, middle adults, older adults, and elderly. Two of these four familial generations will provide the end user context throughout this thesis.

A unique aspect to this thesis is that the research focus is between familial generations. That is, across family households and not contained within one household or home, as is much contemporary research such as the Brunel University study (Silverstone et al., 1990). It is hoped that by focusing on how familial generations communicate, this study will shed light on negotiations and issues not previously uncovered.

This chapter has explored the contemporary research in communications within the context of family by categorising it into five areas: household studies, intra/inter-generational studies, singular focus studies, nested studies, and peer studies. This provides a novel way to categorise the studies on the basis of family generation, as most studies in relation to family and their use of technology adopt a framework of the technology itself, making the technology a greater focus than the family. In this study, it is the generations within the families that are the most important focus. This study is framed in this way to gain a better understanding of how the two adult generations within a family communicate using digital communication technologies.

So what technologies are available to families? What theories best relate to the consumption and domestication of these technologies? In the next chapter the focus changes to that of the technology itself. The chapter begins with a discussion of theories relevant to social adoption of digital technologies in relation to consumption and domestication. The second part of the chapter discusses the literature in relation to digital communication technology. The literature is framed within the context of the digital divide, everyday life, the increasing use of broadband, progressive privatisation and multimodal connection.

CHAPTER 3: Dwelling in Connected Space

The home...is no place for the telephone, which would allow externals to intrude upon this self-contained world. (Green, 2002, p. 23)

3.0. Introduction

The previous chapter investigated what it means to be family in Australia, and clarifies the definitions of familial generations being used in this thesis. Familial generations in this thesis are defined by their relation to each other as youth, middle adults, and older adults. This chapter moves beyond definitions of key terms and frames discussions of relevant theories and adoption practices.

The first part of this chapter (3.1) discusses theories of digital technology consumption and domestication such as the social construction of technology (SCOT) (Oudshoorn and Pinch, 2003), the consumption junction (Cowan, 1987), users and non-users (Wyatt, 2003), adoption theory (Rogers, 1995) and domestication (Morely and Silverstone, 1990). The chapter then delves more deeply into the domestication framework as outlined by Silverstone et al. as a result of their own investigation of ICT use by English families in the 1980s (Hirsch, Silverstone and Morely, 1994; Silverstone, Hirsch and Morely, 1991). It discusses the five stages in the process of objectification that emerge from the communications literature as the domestication framework provides context for the active adoption and engagement of communication technologies within the home. Domestication theory is particularly useful for this thesis as it enables the investigation of the use of technologies from an end-user perspective rather than a technological perspective.

In the second part of this chapter (3.2), literature in relation to digital communication technology is framed within the context of the digital divide, everyday life, the increasing use of broadband, progressive privatisation (Gergen, 2002), and multimodal connection (Schroeder, 2010). Domestication theory was based on research that investigated technology being used within a communal environment, whereas this study explores the adoption progression within the home

from communal to personal, from fixed to wireless. The progression of individual technologies in the home started in the 1980s. Morely and Silverstone identified the trend of multi-set television households in their study predicting that this would be common in the future (1990, p. 32).

Individual devices can alter communal viewing and communication patterns, and Gergen contends that individual ownership of communication devices is part of an increasing move towards the eradication of collective reception (3.3) (2002). The proliferation of individual devices for communication enables a multimodal method of communication between family members. A multimodal method of communication is discussed from the perspective of Schroeder's work (3.4) and is particularly relevant to this discussion of generational communication (2010).

3.1. Framing digital technology consumption and domestication

This section considers some of the theories examining the intersection between technology and end users. Social construction of technology (SCOT) theory helps identify user groups pertinent to a particular technology (3.1.1.), and Cowan's theory of the consumption junction increases understanding of the particular aspects of the technology important to user groups (3.1.2.). Wyatt's theory of non-use offers a perspective that users may be resisting rather than rejecting technology (3.1.4.) whereas Rogers as part of his theory of diffusion of innovations created categories of adopters in the 1950s that remain in use today (3.1.3). The domestication framework identified by Silverstone et al., is the final theory discussed in this section (3.1.5.).

Social theories such as SCOT theory, assert that technology is not fixed and deterministic as argued by technological determinists (Oudshoorn and Pinch, 2003). These theories focus on the ways in which users shape technology (Oudshoorn and Pinch, 2003; Sterne, 2003). In doing so, they also provide opportunities for users to see that existing technologies can be used in new ways. Technologies that are delivered with the technological determinist perspective - 'build it and they will come' - are likely to fail (Barr, 2000; Castells, 2000; Flew, 2002; Murphie and Potts, 2003). Case studies have shown that technology that is fluid and includes input from

end users is likely to be successful (Cowan, 1987; Oudshoorn and Pinch, 2003; Sterne, 2003). Social theorists believe that technology changes in response to different social contexts and ‘the functions of tools can shift across cultural contexts’ (Sterne, 2003, p. 192). Early telephony passed through different stages in the 1880s from a broadcasting medium in Europe that broadcast Parisian and Hungarian opera and to an entertainment and sports broadcaster in the USA (Sterne, 2003, pp. 192–194). These changes illustrate that the purpose of tools can change with cultural as well as social contexts (Sterne, 2003, pp. 192–194).

Almost 130 years later, the telephone is seen predominantly as a converged mobile device, and for a growing number of users telephony also occurs via video using web based services such as Skype (see Chapter 8). These developments are not determinist, but rather, as suggested by Sterne, consider the needs and opinions of end users. Their development confirms the central claim of SCOT, that when technology alters and adjusts in response to end user input, it is said to be ‘socially shaped’ (Cowan, 1987; Sterne, 2003). However, it is important to recognise that technologies can fail. For example, too high a demand for particular products - as in the case of the Telephon Hirmondo, a Hungarian broadcast system - can lead to failure (Sterne, 2003, p. 193). Furthermore, vested interests behind particular technologies such as the QWERTY keyboard can make it too difficult for more efficient typing keyboards such as the Dvorak to replace them (Rogers, 1995, p. 8-10). Other technologies fail because there are not enough users of the technology for communication to occur through these means, such as early forms of the video phone (Kraut and Fish, 1995).

3.1.1. Social Construction of Technology (SCOT)

The SCOT theory offers a sociological perspective for how technology is developed in conjunction with users. It explains the relevance and importance of users, and also provides an opportunity for users to shape technology (Oudshoorn and Pinch, 2003). Using Sterne’s discussions regarding the telephone (3.1.), different social groups are seen to construct radically different meanings of technology (Oudshoorn and Pinch, 2003, p. 3). In essence, SCOT argues that while the innovators and marketers might

develop the initial technology, it is the subsequent users who continue to shape and develop the technology over time (Bijker and Pinch, 1984). However, the question of which group of users plays this role is the point of concern for theorists. Bakardjieva rejects SCOT theory, arguing that to her, 'users were confined to the background' while attention focused mainly on professional groups (2006, p. 64). In terms of developing a product that was suitable for all users, SCOT theorists contend that eventually a technology will become stable and 'a predominant meaning and a predominant use' for every technology will emerge (Bijker and Pinch, 1984; Oudshoorn and Pinch, 2003, p. 3).

From within a historical context and aligned with SCOT theory, Sterne contends that;

Early users did not necessarily differentiate between telephony, sound recording, and radio in the way in which we are disposed to do so today. Sound technologies had to be differentiated from one another and connected with differing social practices and contexts to become media. (2003, p. 183).

In the case of telephony it ceased to be used as a broadcast medium when its primary use was established as a voice communication tool (Sterne, 2003, p. 183).

In this thesis, the emphasis is not on developing or shaping new technologies but rather investigating how the different familial generations communicate with each other using existing technologies. As a consequence, SCOT theory is less relevant than other theories such as domestication theory, which considers how families adopt and incorporate media technologies into the moral economy of the household (Morely and Silverstone, 1990). While SCOT theory provides an understanding of how domesticated technologies evolve through user input, it does not assist in understanding how different familial generations adopt and use digital communication technologies for the purpose of communicating among themselves.

3.1.2. Cowan's 'consumption junction'

Another social theory of relevance here is Cowan's 'consumption junction' (1987). Like SCOT theorists, Cowan is an advocate for exploring technology adoption from an end user's perspective (1987). However, her theory has limited appeal when discussing how people use that technology in their everyday lives. Cowan contends that at the point of consumption, end users need to make a decision about the various aspects of an artifact or technology in order to make their purchase. This is defined as 'the place and time at which the consumer makes choices between competing technologies' (Cowan, 1987, p. 263). Cowan's theory of the consumption junction was seen as a landmark among the social theories of its time, and it provides valuable insight into why people purchase particular technologies (Oudshoorn and Pinch, 2003, p. 5). Cowan's insight into the purchasing of products provides understanding into how people select and appropriate technologies, which ties in well with domestication theory. However, Cowan's theory does not extend sufficiently beyond the point of purchase and into how the end user incorporates and domesticates the technology in their every day life to help inform the later stages of domestication theory.

3.1.3. Diffusion of innovations

Roger's theory of diffusion of innovations offers a way of defining diffusion and a system of categorising adopters that is often used as a reference point in understanding when people adopt technology such as the iPad (Finn and Ciszewski, 2010). This theory is relevant to this study because the theory of diffusion of innovations 'is a social process as well as a technical matter' (Rogers, 1995, p. 4). It is also relevant in its focus on an individual's adoption of a device rather than communal adoption which often occurs in families with communal technologies such as the landline phone. Different again from Cowan, Roger's theory provides a way of considering *when* a person makes a purchasing decision rather than *why* they choose a particular product. Roger's theory defines diffusion as 'the process by which an innovation is communicated through certain channels over time among the members of a social system' (1995, p. 5). It can be both a planned or spontaneous spread (Rogers, 1995, p. 7). Another discerning aspect of this theory is that the

diffusion is of a 'new idea' which gives the communication a 'special character', and that some degree of uncertainty is involved in diffusion (Rogers, 1995, p. 6). Like Cowan's theory of the consumption junction, diffusion is a process of social communication between individuals that may take one or more conversations as information about the technology and the person's needs are exchanged (Rogers, 1995, p. 6).

There are two key parts to Rogers' theory that are relevant to this study: the element of diffusion and the categories of adoption. The adopters are measured by their 'innovativeness' - that is, their willingness to adopt new technology. Rogers proposes five ideal types: the innovators, early adopters, early majority, late majority and laggards (Rogers, 1995, p. 262). Each adopter category holds dominant characteristics and generalisations. Innovators are seen as 'venturesome' adopters, with almost an obsession about innovation which leads them out of their local peer groups and into what Rogers calls 'cosmopolite social relationships' (1995, p. 263). Early adopters are more localised and are credited with respect by potential adopters. They are viewed by other potential adopters as "the individual to check with" (Rogers, 1995, p. 264). The early majority possess the dominant characteristic of 'deliberate', as their innovation-decision period is longer than either the innovator or early adopter. It is also the most numerous adopter category, often making up one-third of adopters (Rogers, 1995, pp. 264–265). The late majority are viewed as 'skeptical'. They often adopt because of economic necessity and all uncertainty must be removed before they feel it is safe to adopt. Peer pressure is also necessary to motivate adoption (Rogers, 1995, p. 265). The final group, laggards, are always last to adopt and are viewed as 'traditional'. The laggards do not socialise much and their 'point of reference is the past' (Rogers, 1995, p. 265). Rogers states that 'their innovation-decision process is relatively lengthy, with adoption and use lagging far behind awareness-knowledge of a new idea' (1995, p. 265). They are also slow to adopt because of limited resources and the necessity of being completely sure 'that a new idea will not fail before they can adopt' (Rogers, 1995, p. 266). It is very easy to identify the older members of our communities, the elderly, with this category.

Rogers defines these categories further by socio-economic status, personality values and communication behavior (1995, p. 268). From Roger's in-depth category analysis, a key point for this thesis is that earlier adopters are not different from later adopters in age, yet 'earlier adopters are more likely to be literate than later adopters' (1995, p. 269). These categories will be useful to consider when reviewing the interviews.

3.1.4. Wyatt's construction of users and non-users (of the Internet)

The majority of the theories and studies discussed in this chapter deal with end users who embrace technology and actively participate and are engaged with its use.

There is, however, another perspective that should be considered here, and that is of the 'want nots' (Wyatt, 2003, p. 76). Wyatt contends that not everyone wants to use and own technology and that there is a clear distinction to be made between the 'want nots' - those who resist and reject - and the 'have nots' - those who are excluded and expelled (2003, p. 76.)

While the purpose of this study is to investigate how familial members communicate using digital technologies, there are individual family members who take an alternative path, that of resistance, against some devices such as the mobile phone (see 7.6) or an application such as Skype (see 8.5).

The categories of non-use proposed by Wyatt offer a useful and alternative view of a group that could be easily be misread as 'have nots' rather than as 'want nots' (2003). The first category of group 'resisters' consists of people 'who have never used the Internet because they do not want to' (Wyatt, 2003, p. 76). The second group called 'rejecters', are people who have stopped using the Internet voluntarily. Wyatt suggests multiple reasons for voluntary rejection; lack of interest in the Internet, financial reasons, or the ability to source information efficiently through other channels (2003, p. 76). The third group, 'no access', includes those experiencing difficulties for digital divide reasons as discussed later in this chapter. The fourth group are people, 'expelled' includes people who have previously adopted but have stopped using it involuntarily because of cost or lack of access (Wyatt, 2003, p. 76).

Wyatt's theory and categories of non-use are placed in context in the results sections in relation to older adult use of the mobile phone (see Chapters 6 and 7) and Skype as it provides an important framework for understanding the take up of technology (8.5).

3.1.5. Domestication theory

The theoretical framework with the greatest relevance for this thesis is that of domestication. Domestication theory grew out of an empirical study conducted in England at Brunel University during the late 1980s (Silverstone, Hirsch and Morely, 1991). Data was collected for the study using a multi-method ethnographic process with 20 English families drawn from the metropolitan area of London and the provincial town, of Slough 30 miles west of London (Silverstone, Hirsch and Morely, 1991, p. 209).

The Brunel team identified a four-stage transactional process through which new technologies pass in order to be domesticated and become part of the moral economy of the household (Haddon, 2006; Oudshoorn and Pinch, 2003; Silverstone et al., 1994). The four stages of the framework are: appropriation, objectification, incorporation, and conversion (Hirsch et al., 1994; Silverstone, Hirsch and Morely, 1991; 1994). The domestication framework can be applied to different types of products and technologies and is not restricted to a single object. It can cover a device such as a mobile phone as well as content, software, and telecommunication services (Hirsch et al., 1994, p. 19). The framework recognises that people consume and domesticate a wide variety of products in order to communicate and has remained relevant to later technological developments.

When Silverstone, Hirsch, and Morely undertook their research, television, radio, and the telephone were the main communication devices that could be appropriated according to the domestication approach. The list of communication devices and methods has now expanded to include, among others, mobile phones, the Internet, instant messaging, SMS, MMS, emails, and VoIP, and domestication theory remains a relevant analytical tool.

The domestication framework also recognises that the meanings ascribed to these objects, such as a telephone or television in the public sphere may not be the same as those ascribed to them in the private sphere of the home (Hirsch et al., 1994). Individuals are able to assign their own meanings to their devices based on their own individual, cultural and social values. There is flexibility in the domestication framework, which enables differentiation among end users and enables this framework to also be applied to this research.

The domestication framework describes the household as both 'moral' and 'economic' – 'moral', in that the household makes decisions about goods and services for the home, and 'economic', in that it engages in negotiations and transactions in the public economy in order to do so (Berker et al., 2006, p. 4; Cowan, 1987; Hirsch et al., 1994; Silverstone, Hirsch and Morely, 1991). In defining the moral economy. Hirsch, Silverstone, and Morley drew on the work of anthropologists and historical research 'in which households are conceived as part of a transactional system of economic and social relations within the formal or more objective economy and society of the public sphere' (1994, p. 14). These households were perceived as being 'actively engaged with the products and meanings of this formal, commodity-and individual-based society', and they saw that this engagement involved the 'appropriation' and 'incorporation' of 'these commodities into domestic culture – they are domesticated' (Hirsch, Silverstone, and Morley, 1994, p.14).

The moral element within the context of this thesis is worthy of exploration. Do decisions made between the different generations, such as the possible purchase of a mobile phone for an older adult family member form part of the moral element of the decision making process? How does the previous life of technologies affect the appropriation of objects? (Gray, 1995, p. 231). It should be noted that the framework of domestication proposed by the Brunel team does not include the biographical life of the object prior to its appropriation by the household, although Hirsch, Silverstone and Morely acknowledge that there are many biographies for each object (1994, p. 15).

These various overlapping and interconnecting biographies are those of the individual object (my computer), the product (the Olivetti M24), the generic technology (computers). Through these various biographical lines, the life of the object can be traced in all its glorious certainty and uncertainty, from invention to production to marketing to use and disuse, and the uniqueness of that life can be used as a tracer of the social and cultural contexts of its continuous creation and recreation. (Hirsch, Silverstone, Morely, 1994, p. 15)

The biography of an object may have significance to the moral economy of the family and to the negotiation processes that occur between family members if the object is part of an exchange or 'gifted' by another family member, a possibility discussed later in the results of this thesis (6.1.1.1.).

The first stage, 'appropriation', focuses on the acquisition of the object. The object may be acquired through a family member as suggested above, or it could be purchased through a retailer. The acquisition of the object may occur with assistance, particularly for older members. Typically, if the purchase is made by an older family member, assistance may be required from another family member or peer irrespective of whether the assistance may be financial or knowledge (Bell, 2009; Palmer, 2011). In some homes where resources are scarce, there may be 'collective decisions and negotiations about access and use' (Haddon, 2006b, p. 107).

The second stage identified by the Brunel team as 'objectification' focuses on the display of objects in the home. The objectification of a communication technology tells us how the object is used, displayed and what its display reveals about the household and its place within the wider culture. While Silverstone, Hirsch and Morely state that ICTs are 'bought for their aesthetics as well as their function' (1991, p. 15), Hirsch et al. extend this concept about technology and aesthetics and contend that all homes have their own aesthetic, and that many objects are purchased as much for their compatibility with the 'dominant aesthetic' as for their functionality (1994, p. 20). This relationship between aesthetics and function in relation to technology is discussed in greater depth later in this section (3.1.6).

The third stage, 'incorporation', refers to the ways in which objects are used in the home, and the associated questions that arise as a result of that use. The flexibility of the domestication framework enables researchers to investigate specific user groups, such as families, and discover how they adopt and use a particular technology. As the needs or skill level of the individuals change, so does the biographical life of the technology. Some technologies such as computers can have many different functions within the home - for example, educational use, work use, and for searching for recipes (Grundy and Grundy, 1996). Alternatively, a mobile phone can be used as much for its additional applications such as the alarm clock, as for its purpose as a telephone (Oudshoorn and Pinch, 2003). The use of a technology may enable time to be used for other things, or in the case of the VCR it may shift time (Hirsch et al., 1994, p. 21). Incorporation also introduces questions about age and gender, visibility or invisibility within that particular moral economy (Gray, 1995; Hirsch et al., 1994, p. 21). Hirsch et al. contend that the incorporation of technologies within the household provides for a basis for constant differentiation and identification within and between households. As a result, spatial and temporal boundaries are created and defended within the household (Hirsch et al., 1994, p. 22).

The final stage, 'conversion', is like appropriation in that it 'defines the relationship between the household and the outside world' (Hirsch et al., 1994, p. 22). In the words of Oudshoorn and Pinch, 'the use of technological objects shape relationships between users and people outside the household' (2003, p. 15). It is essentially another form of negotiation. Hirsch et al. argue that the appropriation of an object has no meaning unless it is displayed publicly, and in a technically savvy world there are now myriad ways of displaying that ownership (1994, p. 23). In person the placement of a new mobile phone on the table in a café is taken as a display of ownership. Posting a status update to Facebook or other online platform enables the platform's software to announce the brand and model with which the post was made.

3.1.6. The five stages of 'objectification' within the domestication framework

From the literature there emerges a multi-stage process within the objectification phase of the domestication framework. End users *disguise* their new technology, adopt *multiple* units, technology becomes *transparent*, technology becomes a *necessity*, and technology is *decorated*.

Following Hirsch's contention that many objects are purchased as much for their compatibility with the 'dominant aesthetic' as for their functionality (1994, p. 20), this section considers how Australians and people in general objectify their technology within the domestication framework and specifically within the home. As people move through the five-stage process, an item is domesticated into their everyday lives as it shifts from a category of 'novel to normal and from luxury to necessity' (Watkins, 2006 p. 145).

The first stage is for end users to *disguise* their new technology. In both the Brunel study and a study undertaken by Ling and Thrane, participants disguised their new technology when it was brought into their homes (Ling and Thrane, 2001; Morely, 2006). Australian cook and author Donna Hay recalls the television set her parents bought; "I remember when we got a new television, it was like furniture; it had big speakers on the sides covered in gold fabric" (Hay, 2006, p. 70). People want to create their homes with objects that they have either themselves produced or consumed, argues Noble, in an effort to make their home 'feel homely' (2002, p. 57). The need to feel cosy or homely is also supported by Rose, who states that for her interviewees, 'photos were the first objects they unpacked after moving house: Jane W said "Yeah I moved in just sort of put pictures up. Just to make it feel like home you know" (2003, pp. 5–6).

Morely notes that during the research undertaken by the Brunel team, many households 'disguised the presence of communication technologies', including television sets, computers, and wiring (2006, p. 32). This is a common tendency in several studies. There are some users who wish to hide their technology because technology symbolises work and not leisure (Ling and Thrane, 2002). 'The personal computer (PC) was not seen as a natural element in the living room. The television

has faced the same issue during its introduction in the 1950's and 60's ... The PC seems to carry with it the character of a functional or a working area. This clashes with the sense that the living room is intended to impart, such as the sense of leisure and social interaction' (Ling and Thrane, 2001, p. 5). Perhaps for these end users it is more as Noble describes, where to 'feel a sense of being "at home", therefore rests on the capacity of objects to withdraw, to become "invisible" elements of an embodied, practical knowledge of familiar space' (2002, p. 58).

Ling and Thrane also discovered that their participants disguised technology for aesthetic reasons (2001). 'While the mother here accepts the TV, the PC is put into another aesthetic class. It is described as ugly and it takes up space' (Ling and Thrane, 2001, p. 5). Australian cultural geographer Greg Noble maintains that the tendency to physically conceal technology 'pipes, wiring and beams' in his study is an attempt to conceal the 'intrusion of, and reliance on, the outside world' (2002, p. 58). This follows an older theoretical thread of public intrusion within the private space of home, whether the intrusion is technology or some other moral panic (Goggin, 2006). The home was seen as having a permeable boundary between its public and private spheres (Bakardjieva, 2006; Green, Holloway and Quin, 2004; Silverstone, Hirsch, Morley, 1994). 'Different families will draw on different cultural resources, based on religious beliefs, personal biography, or the culture of a network of family and friends, and as a result construct (a more or less permeable, more or less defended) bounded environment - the home' (Silverstone, Hirsch, Morley, 1994, p. 17). However, Bakardjieva saw this boundary eroding; 'the boundaries between the world beyond the doorstep and the "private" life of the household were ceaselessly cracking and shifting' (2006, p. 66). Wajcman, Bittman and Brown similarly note that the boundary between work and home life is disrupted by individual communication technologies such as the mobile phone, because of the changes in connection practice brought about by an individual rather than a communal device (2009).

The second stage of objectification is *multiplication*. In this stage, technology appears in multiples within homes. There has been a notable increase in multiple units of technology as adoption practices alter within families – for example, cordless phones

in households to increase privacy for callers (Ling and Thrane, 2001, p. 8) multi-set television households (Morely and Silverstone, 1990, p. 32) and correspondingly multiple VCRs (Gray, 1995). As each technology evolves and is accepted into the household, it multiples. The same can be said for computers and telephones (Schroeder, 2010, p. 78). It is not only the multi-set household that emerges at this stage; the increasingly permeable boundary between home and work has seen a greater range of work-related technologies enter the home.

People were bringing in work from their offices and schools ... the physical household was in actuality only a node in a much larger network of significant others ... objects such as computers and modems were flowing across the public-private divide (Bakardjieva, 2006, p. 66).

With each new technology introduced into the household, the range of technologies per household also increases. This forms part of the discussion of multimodal connection in section 3.4.

Transparency is the third stage in the domestication process. Morely equates transparency with naturalisation (2006, p. 32). Berker et al. support Morely's contention, suggesting that 'at a symbolic level, ... in the long run, technologies, like pets, can become part of the family' (2006, p. 2) and that when domestication is successful, 'technologies are not regarded as cold, lifeless, problematic ... but as comfortable, useful tools' (2006, p. 3).

Transparent technologies mean that the user sees not the technology itself but the person it connects them to. This closely resembles what happens with family photographs. People fail to see the individual from the perspective of the photographer, even if it is a photograph hanging in an art exhibition. When viewing photographs they only see the person they know. In speech, people drop 'this is a photo of' and instead simply say 'this is' (Rose, 2003, p. 11) as 'all of us tend to look at photographs as if we are simply gazing through a two-dimensional window onto some outside world' (Batchen, 2000, p. 263).

The fourth stage of objectification is *necessity*. People have become so comfortable with entertainment and communication technologies that the object is no longer simply domesticated, it is considered a necessity by the end user. The ubiquity of mobile phones illustrates the perceived necessity of this item, but perhaps the best contemporary example of this transition can be explained using the Internet. In an era of greater take up of Internet connections within the home (see 3.2.3.1.), the transition phase between novel to normal has progressed in many Australian homes such that an Internet connection is now considered a 'fourth utility' after water, electricity, and gas (Thom, 2010).

The fifth phase is the *decoration* of technology. This transparency to the user has also resulted in a closer relationship between the user and the technology and, in the case of particular devices such as the mobile phone, end users often consider their phone as an extension of themselves and as way of expressing identity (de Gournay, 2002). To young women, decorating the external surfaces of their mobile phones is part of their identity display. Decoration can be gender and culture-specific. Asian teenage girls, in contrast to the French teens, like to decorate the external surfaces of their mobile phones (Hjorth and Kim, 2005; Hjorth, 2007; Ling, 2003; Sugiyama, 2009) and use functions like personalised ringtones (Skog, 2002). Some girls are more receptive to aesthetic devices and use them as fashion statements and as way of displaying personal identity (Oksman and Rautianen, 2003; Sciriha, 2006; Sugiyama, 2009). Other girls like to use their mobile phones to signal that they are in a relationship (Hjorth, 2007). Irrespective of how technology is decorated, the decoration of technology represents the objectification and domestication of the object. It is visual confirmation that the object has been accepted by the individual.

3.2. Framing the literature about digital communication technology

Domestication theory rests on the assumption that all participants have access to technology at home. However, this theory needs to be contemporised as its media environment was restricted when compared to the current media landscape. Furthermore, it does not discuss or include the other wider societal contexts. In a

contemporary media landscape there are variable levels of access to technology people possess and have access to fixed or mobile connectivity - some without the skills to use it; there is a wider range of technologies available; and most importantly there are varying levels of connectivity provided by telecommunications organisations. In contrast to domestication theory when it was first formulated this thesis is situated in an era where personal communication technologies exist that are fixed *and* mobile. This next section explores some of these wider societal issues as a way of providing context for the results.

This next section frames the literature about digital communication technology into three groups. These three groups reflect the types of research undertaken to explore the adoption and domestication process of the mobile phone and the Internet. The first group discusses literature in relation to the digital divide and social impact studies (3.2.1.) the second group considers the use of digital technology in everyday life (3.2.2.), and the third discusses literature in relation to the increasing use of broadband (3.2.3.).

3.2.1. Digital divide and social impact studies

At the beginning of the 1990s when digital technologies were beginning to be adopted within the home, the notion of the 'digital divide' was the focus of many studies. Norris's 2001 book *Digital Divide: Civic Engagement, Information Poverty, and the Internet Worldwide* and the online journal *FirstMonday* were the main reference points in this era. Norris saw the divide as comprising three distinct aspects: the global divide, the social divide, and the democratic divide (2001, p. 4). Depending on the perspective of the researcher, the social digital divide comprised seven factors as it was presented at that time: age, occupation, education including parental education, ethnicity, gender, geography, and income (see, for example, Millward, 2003; Norris, 2001; McLaren and Zappala, 2002). Rhetoric included 'haves' and 'have nots', 'information rich' and 'information poor' (Barr, 2000; Norris, 2001). Within Australia the digital divide was apparent in our rural, regional (Cameron and Goggin, 2005), and remote areas (Bell 2009; McLaren and Zappala, 2002) where there remains a marked disparity in access to Internet connectivity.

The digital divide was also present in the less obvious areas of our urban environs. In general, Australian households with a low socioeconomic background are less likely to have access to ICTs than those from a high socioeconomic background (McLaren and Zappala, 2002). The Atherton Gardens estate located in the inner-city Melbourne suburb of Fitzroy was part of an initiative to examine the introduction of computers into the homes of Australians living in public housing in the hope that it would stop the repeat cycle of low socioeconomic living (Meredyth and Hopkins et al., 2002; Meredyth and Thomas, 2007). In recognition of this link, many studies also explored the capacity for the 'have nots' to be able to connect in public spaces like libraries (Bertot and McClure, 1998), given that physical access to computers for many in the home was a large problem at that point in time. That said, not all public libraries had access either. In 1998 90.5% of Victorian public library services had some type of Internet connection and 58.5% of all library branches were connected to the Internet (Bertot and McClure, 1998, p. 5).

Research into digital divide issues has changed since those early studies to focus more on skills and less about physical access. As a result, the predominant rhetoric changed from the 'have' and 'have nots' to encompass notions of 'inclusion' and 'exclusion'. Social inclusion and exclusion have focused on the elderly who have been considered, in danger of being socially excluded because of their lack of skills in the use of new technologies (Ling, 2008; Haddon, 2000; Wong, 2006).

3.2.2. Technology use in the home: communal, private and portable

Another topic to emerge focused on domesticating technology and its use in everyday life. Morely and Silverstone maintain that ICTs should not be viewed in isolation but rather 'as one of a number' of ICTs within the home (1990, p. 31). Drawing on earlier work in relation to domesticating technology within the home (Silverstone, Hirsch and Morely, 1991), this second group of literature dealt with everyday issues of daily life. Common everyday issues investigated among families can be organised into two categories; technology use in the home (3.2.2) and between family members (3.2.3).

In the late nineteenth and early twentieth centuries in the US the telephone was the first communication technology introduced into the home where previously its primary use had been as a business tool (Fischer, 1988; Lasen, 2005; Sterne, 2003). The telephone in that era was seen to be of use in line with the telegraph, that is, for practical purposes (Fischer, 1988). With an ironic nod to the use of the Internet for connectivity today, telephone marketers highlighted the practical uses of the telephone for 'weather reports, concerts, sports results, and train arrivals' (Fischer, 1988, p. 38). It was also promoted as a tool for planning and keeping in touch with the office during vacations, much like mobile phones and the Internet enable us today.

Getting people to purchase and use the telephone in the home however was a different experience. The US telecommunications company Bell struggled to increase the take-up of the telephone in the US home until the late 1920s when they changed the focus of the phone to include the 'social character of the telephone' as part of their aggressive marketing strategy; at the time social conversations were labelled as 'frivolous' and 'unnecessary' (Fischer, 1988, p. 48). By contrast, social use of the phone is now its primary use (Wajcman et al., 2008a). The phone, particularly the mobile phone is now credited with assisting in social cohesion, particularly among family and friends (Goggin, 2006; Ling, 1998; Lohan, 2001; Rakow, 1992; Wajcman et al., 2008a).

Historically the fixed line telephone was a communal instrument in the domestic sphere of the home. The location of technology within the home is another key factor in communal use. In early telephone studies the communal landline phone was often located in the hallway or lounge (Lohan, 2001; Sterne, 2003). Yet computer locations are negotiated and managed differently. For example, in Norway if there is a secondary communal space other than the living room such as a home office, den or bedroom, computers will be housed there. For Norwegians 'it isn't cozy (*hyggelig*) to have a PC in the living room' (Ling and Thrane, 2001; p. 6).

Sharing devices is about more than just location. It is also about the negotiations of use that occur between family members. Green, Holloway and Quin noted that

computer sharing occurred among Australian families by agreeing on hierarchies of use (2004). Furthermore, the trend towards personal devices rather than communal devices affects negotiation processes. If a device is individually owned then no negotiations need occur, but when the device is to be shared and especially if it is not portable, as is the case with desktop computers and landline telephones, then more discussions about appropriateness of the location for the device are held. Importantly, these discussions are also importantly based on the power and gender dynamics within the family involved (Haddon, 2006).

Gender-based research examining fixed-line services in the 1990s indicated that women were the more social of the genders when using the telephone, taking calls from family and friends, and acting as gatekeepers for other family members, while men were reluctant to participate on the phone (Lohan, 2001; Moyal, 1995; Rakow, 1992). These findings confirmed that the key purpose for the telephone in the home is social. For mobile phones, on the other hand men are proactive in ensuring that women acquire mobile phones for reasons of safety (Rakow and Navarro, 1993). Supriya Singh contends that 'as a technology becomes domesticated and feminized, gender differences are seen in the use of the technology rather than access' (2001, p. 396).

Lohan's Irish study investigates men's use of the landline telephone and shows that while women are 'seen' to use the telephone more for networking purposes, men do value the phone in order to receive and make calls even though 'they were much less willing to, or less sure about, actively taking on the labour of communication' (2001, p. 154). In the words of one of Lohan's participants, describing what he perceives his father feels about using the telephone, 'you *know* he is uncomfortable on the phone, even by his body language...Most people sit on the chair right? Well he sort of crouches down looking at the phone. He wouldn't lounge in the chair' (2001, p. 153).

Other studies investigating the use of technologies within the home confine their focus to a particular technology. For example, Gray's study on video recorders (VCRs) focused on the use of this device within the home (1995). Gray's investigations

revealed how the device impacted on power relations between family members, indicating that gender differences were prevalent in some families and that particular types of devices can be gendered. As a result of 'the division of labour in the home and appropriate territories mapped out across gender', entertainment devices such as television sets and VCRs were considered masculine technologies (Gray, 1995, p. 233; Grundy and Grundy 1996, p. 30). Later in this thesis in Chapter 7 there is a discussion about gender in relation to technology use.

The communal fixed-line telephone is dwindling in popularity as the main telephone in the home. By 2009 ACMA reported that 90% of Australian households still had a fixed telephone service connection (ACMA, 2009, p. 49), even though the use of landline phones had dropped for both Telstra and Optus (ACMA, 2009, p. 27). Young people who set up home for the first time are unlikely to do so using a fixed telephone connection as they retain their individual mobile phone for domestic and personal calls and texts (ACMA, 2009b, p. 19-20). Youth in countries other than Australia such as Sweden and Estonia are also electing not to connect fixed-line services (Baron and Hard af Segerstad, 2010).

Results indicate that by 2009, revenue from mobile phones exceeded that of traditional PSTN services for the first time for both Telstra and Optus (ACMA, 2009a, p. 27). Use of the landline may not drop in family homes where telecommunications plans offer landline telephony included as part of the bundle (Colley, 2007), or in homes of older adults who prefer to have not adopted mobile phones. For example Optus created the 'Fusion' package in 2007 especially to keep interest in landline telephony in order to 'maximise returns from the investment in its fixed voice network' (Colley, 2007). For older adults who do not have a telecommunications bundle, the cancelling of a landline phone is unlikely for social and cultural reasons (Haddon, 2000; McLeod, 2009; Rakow, 1992). While fixed or landline telephony is not likely to decrease in family homes or among older adults just yet, ACMA reports that this does not apply to younger people 'Sixty-one per cent of those living in a household without a fixed-line voice service are aged 18–34 years' (ACMA, 2010, p. 35).

It is also possible to draw the conclusion that landline phones will continue to reduce in number as the preference for other dialogic communication technologies that are Internet-dependent - such as VoIP, Skype, and chat - become increasingly domesticated and grow in popularity (ACMA, 2010, p. 36). This is especially likely as these alternate dialogic communication technologies are available across platforms and devices, providing more flexibility.

Along with landline phones in homes there has been a significant drop in usage of payphones as discussed earlier. This is a cultural change within Australia and the rest of the world. Ling and Donner identifies the cultural change succinctly as

People born since the mid-1990s may never set foot in a phone booth. Thanks to mobile telephones, most of them have, or will soon have, the ability to reach anyone else they want to, regardless of either person's location. They will never have to deal with the search for an evasive phone booth in an unfamiliar location. They will not have to rummage madly for a dime (or a krone or a pound or a frank) to buy a few minutes of time. In short, they will not fully understand the way that the phone booth was a shared experience and cultural icon (Ling and Donner, 2009; p. ix).

As an extension beyond these ways of thinking about the boundaries between home and the outside world, we should now be considering within domestication frameworks the notion of mobility. The previous discussion highlighted the ways in which mobile phones were being used in public space, but their usage is more complex than that. Mobile phones are now being used in both private and public spaces as a continuous form of contact. The individual direct connection afforded with mobile phones removes the communal aspects and norms of fixed line services and provides family, friends, and colleagues with 'perpetual contact' (Katz and Aakhus, 2002), with the ability to remain in 'constant touch' (Agar, 2003). This constant connection can be viewed from a tethering perspective, that is, where we consider that fixed-line phones once tethered callers to a fixed location, we now consider callers to be tethered to their phones (Schroeder, 2010). Other terms such as 'leash' (Ling, 2004) or 'umbilical cord' (Gergen, 2002) can also be applied to

describe the connection. When writing about youth and their use of the mobile phone in 2002. Anderson states, 'mobiles are used both inside and outside the home because they are a personal communication device not just a mobile device' (Anderson et al., 2002, p. 18). In the decade since, it is no longer just youth who have altered their cultural practices in relation to the mobile phone as adults - and older adults - have adapted and adopted new practices as well.

3.2.3. Technology used to communicate between family members

The previous chapter discussed the issues that arise between family members as a result of the use of communication technologies - such as control, emancipation and status especially in relation to teenagers were discussed (Ling and Yttri, 2006; Sciriha, 2006). These issues also became key for the other generations, where youth's parents were struggling with their own parents (older adults) and busy negotiating with them on issues relating to emancipation and control. The issues for some families are parent - child negotiations about computers (Green et al., 2004) and mobile phone use (Kaare et al., 2007; Nafus and Tracy, 2002; Ling, 2004).

The mobile phone enables greater coordination with parents and peers compared to the more restricted environment of a communal landline (Ling and Yttri, 2002, 2006; Ling, 2004). Primarily as a challenge to the ubiquitous presence of the mobile phone, there has been a rise in research in relation to its use in private and public space and the impacts of technology, particularly mobile phones, in these spaces. At home when the landline phone rang, people were accustomed to not answering the phone immediately and to not responding obediently (McLeod, 2009; Moyal, 1995, p. 270). They controlled the device, the device did not control them. The use of answering machines, however, enabled call screening and shifted the 'power dynamics of a caller-answerer relationship' (Humphreys, 2005, p. 823). The adoption of the mobile phone overturned these processes and brought with it instant connection and communication - and with it the expectation of immediate response.

Direct connection to individuals altered again the dynamics of the caller-answer relationship especially among family members. People now feel that if their mobile phone rings it needs to be answered immediately, as if personally summoned

(Licoppe, 2010). This, however, has also raised issues of trust between child and parent (Carroll and Hartnell-Young, 2004). As many parents subsequently discovered, providing a mobile phone did not always ensure perpetual contact as teens often sought to escape and avoid parental constraints by switching off the phone or blaming lack of contact on a dead or flat battery (Sciriha, 2006, p. 174). While children may ignore parental texts and calls to their personal mobile phones, mobile phones have assisted families in time management 'Time is one of the media through which a household or family exercises control over itself and attempts control over its environment' (Silverstone, 1993, p. 285).

Calls and texts to ascertain meals times and home times are referred to as domestic orchestration (Nansen et al., 2009). Previously these types of daily events were relatively inflexible as the timing of events needed to be prearranged. For some families patterns of use emerge when time is constructed around a fixed schedule indicating that people construct their lives or 'domestic orchestration' around fixed events (Nansen et al., 2009; Silverstone, 1994, p. 39). This no longer applies, as mobility and flexible television schedules provide more opportunities for a fluid lifestyle. With attribution to Morely (1986), Silverstone also contends that the way families integrate television watching into their daily lives is complex and is based on gender and power relations (pp. 38–40; van Zoonen and Aalberts, 2002). With fixed broadcasting schedules constant negotiations occur: however, in an era of time-shifted television and flexible use of personal communication technologies, negotiations between family members have grown more complex and time use more critical (Anderson and Tracey, 2001; Anderson et al., 2002; Silverstone, 1993).

3.2.3.1. Emotional work and Skype: 'emotional labour', remote 'mothering', and 'care-giving' within families

Families strive to keep connected with extended and remote family members, and in the past they were reliant on the telephone and mail to do so. Families are now increasingly able to communicate using digital communication technologies, in particular mobile phones and Internet applications such as Skype. For families, it is important to keep a sense of connection when they are apart and to feel a strong sense of social inclusion. Achieving connection requires 'work' on the part of

everyone involved. It takes work to organise family social gatherings, typically through phone calls, the sending of texts, and emails. This work is relatively visible. However, organising less recognisable ways of connecting such as Skype video calls could be considered relatively unseen work and yet it takes work to organise these calls. People like to be consulted regarding their availability to participate, and this prior work needs to be done in order for participation to happen. Work that fosters social connection is largely unseen and unrecognized; it is often undertaken by female family members and is known as 'emotional labour' (Rakow, 1992). Men have traditionally exerted control over technology use including the telephone, even though they generally did not use the phone themselves (Livingstone, 1994; Rakow, 1992, p. 50). The gendered division of labour within the home has little to do with 'technological competence but everything to do with social use' (Gray, 1995). Rakow (1992) suggests that the telephone 'has become a domestic appliance, ... operated by women as an extension of their other familial responsibilities' (p. 50).

Rakow argues that telephone calls act as a form of caregiving - an example, of families 'caring about' and 'caring for' each other (Rakow, 1992, p. 57). People work together to foster greater emotional connection with each other. When it is a mother who is retaining connections with her children who may be geographically separated from her, it has been described as 'remote mothering' (Rakow and Navarro, 1993). In Rakow's study of the people living in Prospect the role was often reversed with adult children keeping in regular contact with their own mothers by telephone (1992, p. 56). This is also a common occurrence in other studies too where adult children keep in contact with their parents, especially if they are physically remote from each other.

3.2.3.2. Communicating with older adults and the elderly living away from the family home

For older generations living away from the other family generations in a retirement village or nursing home, using digital technology to communicate with family members is difficult. Due to raised awareness that for some elderly the switch to digital technologies is confronting, a number of different devices have been designed

to help demystify and make even more 'user friendly' communications technology for the elderly. These devices help the elderly to connect with family and friends using digital technologies. The 'My Postie' kiosk is a touchscreen device that is located in retirement villages, hostels and nursing homes and enables the elderly to send their handwritten letters and photographs to family and friends via email (MyPostie, 2007). For older adults and the elderly who struggle with the small keypads on mobile phones, Telstra has designed the EasyTouch Discovery mobile phone with larger keys for easier use (Telstra, 2009). Overseas telephony initiatives for older adults include products such as the Jitterbug telephone. This telephone is specially designed for older people to more closely resemble an older-style phone, as it has an earpiece that covers the user's ear and a microphone located near the mouth (Garrett, 2007).

3.2.3. Broadband connectivity

The third topic of research relates to broadband connection - both through the Internet on computers and, for a growing numbers of users through mobile phones known as 3G or mobile internet. Internet take-up within the home increased from 5.1 million household subscribers in March 2005 to 8.1 million in December 2010 (ABS, 2005; ABS, 2010). Early Internet adoptions were usually dial-up, using a landline telephone line and modem, but quickly households transitioned towards high-speed fixed broadband connections where possible (Adams, 2008). Now Australians are also opting to use the Internet through wireless technologies, enabling greater mobility when away from home, or even at home through wireless broadband and/or mobile Internet connections (ACMA, 2011). The number of wireless broadband subscribers has also escalated, from 2.8 million in December 2009 to 4.2 million in December 2010 (ABS, 2010). The third option for Australian wireless users is connecting to the Internet via a mobile phone handset, known as 'mobile Internet'. Australians are opting for Internet connectivity through their mobile phones to continue their personal connectivity as distinct from personal communications, within the boundaries of the connected space of home (ACMA, 2011; Rickard, 2011).

Connecting to the Internet, especially using a high-speed connection, enables users to increase their use of dialogic communication technologies such as chat and Skype. High-speed broadband provides a higher quality connection for instant chat and quality voice and video calls provided through Skype. The use of video is increasing on both fixed and wireless connections in relation to storage online, downloads and television watching (ACMA, 2011, p. 18).

Using a wireless connection enables greater possibilities for connection simply because the user can take their technology and connection with them and use it anywhere, even within their own home. Early evidence of end user adoption of mobile technologies within the home can be seen in Ling and Thrane's discussion of 'personal spheres' in relation to their participants' use of extension phones specifically cordless ones (2001, p. 8). While still essentially a fixed service the use of cordless phones clearly demonstrated user preference for privacy during calls. Now with the continual development of devices that are mobile, such as mobile phones or devices that aid mobility (such as 3G or pocket WiFis), users are no longer restricted to a fixed location-based service as they were in their early use of the fixed or landline telephone.

3.2.3.1. Computing

According to the ABS, in 2006–2007 64% of Australian households had Internet access at home, 73% had access to a home computer, and 43% accessed the Internet at home using a broadband connection (ABS, 2007). Other countries had variable rates of up-take: Denmark had the highest access to a home computer (84.8%) and Mexico the lowest (12.2%) (ABS, 2007, p. 47). There was also a marked difference in home Internet connections, with South Korea reporting the highest take-up rate (94%) and Turkey the lowest (1.7%) (ABS, 2007, p. 47).

The growth of computer and Internet access has increased steadily in Australian homes after 1998 as Australians began to see the benefits of home computer use (ABS, 2007, p. 7). Ninety-eight per cent of Internet-connected Australians in 2007 used their home computer for private or personal use (ABS, 2007).

From a familial perspective the computer and its applications and services offer a cost-effective way to communicate with geographically separate family members. Australian ISPs bundle their services - that is, they combine multiple services such as home landline phone rental, pay TV subscription, and mobile phone services with Internet connections to provide cost-effective savings for consumers (ACMA, 2011, p.36). As of April 2011, 53% of Australian adult consumers 'were estimated to have two or more telecommunications services provided via a bundling arrangement' (ACMA, 2011, p.36). Using the Internet as a communication tool means that familial communication can be included as part of the monthly Internet connection fee and not be costed separately like the traditional telephone rental and associated charges.

Computers and the Internet also offer multiple communication methods. Where once the Internet was limited to text services such as emails, now instant messaging and VoIP web based services such as Skype offer visual and audio connection with distant family members (Rickard, 2009). If desired, multiple party calls may replace the single one-on-one telephone call. Online photos and videos can also be accessed through family websites and social networking sites such as Facebook. Prior to broadband, communicating through video chat and IM meant time delays and at best poor visual or audio connections (ACMA, 2007).

Another important part of technology use is the level of connectivity. The demise of the landline phone and the rise in popularity of mobile phones and their connectivity to the Internet has increased the desire of some to be 'always on'. Australians have responded accordingly and Internet subscriptions reached 8.4 million in 2009, 87% of which were broadband subscriptions (ACMA, 2009, p. 25). Broadband users are more likely to create content than dial-up subscribers, and early adopters are most likely to not only be broadband users and create content such as blogs (Lenhart, Horrigan, Fallows, 2004; Lenhart and Madden, 2005). Today the use of rich media like video requires a stronger Internet connection for quality reception. Creating and posting videos for family members on YouTube or phoning home using Skype requires a broadband (or similar) connection for a quality experience (Rickard, 2009). The increasing participation in video services such as YouTube and in specialist services such as VoIP (ACMA, 2010) indicate that a rollout of the Australian National

Broadband Network (NBN) in coming years will only increase the demand for media rich services such as Skype.

It should also be mentioned that not all Australians live in stereotypical urban environments with high levels of home and personal access to computers and the Internet. As discussed earlier some urban environments have low rates of access for socioeconomic reasons, and rural, regional, and remote areas have less Internet access (3.1.1.). The ABS report in 2007 noted that Australian households in non-urban areas were less likely to use the Internet or have broadband access at home (p. 39).

3.2.3.2. Broadband Internet connectivity and mobile phones

Japan is one of the top countries in the world for mobile broadband take-up. In 2010, 87.8% of Japanese had an active mobile broadband subscription (ITU, 2011). Studies coming out of Japan in the early part of this century highlighted not only possible future technologies and social direction for the rest of the world (for example web-enabled phones), but also how deeply the mobile phone assisted in constructing identity for users (Goggin, 2006; Miyata et al., 2005; Sugiyama, 2009). The seminal book *Pedestrian, Portable and Personal* examined the mobile phone usage in Japan in that era and how using a broadband-enabled mobile phone was changing the everyday lives of the Japanese (Ito, Okabe and Matsuda, 2005). Some of the Japanese experiences such as familial micro-coordination by Japanese housewives (Dobashi, 2005) and exchanging emails using a 'web phone' are now easily recognisable as part of a global mobile phone culture (Miyata et al., 2005).

Australian mobile phone subscriptions have continued to increase. In June 2008 there were 22.12 million mobile phone services provided in Australia; three years later in June 2011 there were approximately 29.28 million Australian mobile phone services, an increase of 13% from the previous year (ACMA, 2009a, p. 53; ACMA, 2011). In June 2011 33% of mobile phone handsets were capable of accessing the Internet, a 26% increase from the previous year (ACMA, 2011, p. 41).

Access to data and the Internet through a mobile phone has also made camera-phone photography viable as a distribution and publishing outlet for familial photos (Hjorth, 2007; Kato et al., 2005; Okabe and Ito, 2005). For the majority of users, photos were once restricted to display in phone galleries or distribution by SMS or Bluetooth. Now broadband-enabled mobile phones can upload photos to the web through email or social networking sites for quick distribution and display (Goggin, 2006; Haddon, 2007). Many of the photos on camera phones are used to record moments of everyday life (Okabe, 2004; Scifo, 2005; Hjorth, 2007). South Korea and Japan were among the first countries to be able to experience the dissemination of photos in this way (Goggin, 2006; Hjorth, 2007).

3.3. Domestication in an era of 'progressive privatisation'

The domestication of the Internet within the home, along with the portability and individualisation of devices such as the telephone, has led to a greater number of direct person-to-person interactions. The trend away from communal communication technologies towards personal ownership of communication and entertainment technologies is part of what Gergen calls 'progressive privatisation' (2002, p. 230).

Morely and Silverstone identified the trend towards private and individual ownership in the context of television and argued that there was 'potential significance of the changing distribution of hardware' through the 'emergence of the multi-set' within homes (1990, p. 32). They maintained that 'these technical changes could have profound implications for the potential development of domestic life' (Morely and Silverstone, 1990, p.32). However, while identifying this trend, they failed to consider the effect this adoption of multi-sets may have on non-broadcast communication technologies such as the telephone.

Gergen raised the concern that with progressive privatization, our ability to participate in 'collective reception' would be lost and that the experience of sharing information, and experiences as a family group would be less likely to occur if people were using personal technologies (2002, p. 230). There is 'an increasing potential for immersing people in private as opposed to collective worlds' (Gergen, 2002, p. 230).

However, in several contemporary papers, writers depict scenes of family life where people are in communal spaces such as the family room performing their own tasks, and in some cases using their individual devices in order to do so (Bakardjieva, 2006; Gora, 2010; Ling and Thrane, 2001; Tutt, 2005). While not explicitly emulating collective reception as defined by Gergen, being in communal space does enable the possibility for deliberation and discussion. While people multi-task as they watch television, using the Internet or text using their mobile phones there is still the possibility for collective reception and active discussion.

Morely offers a slightly different perspective from Gergen of the progression of family life. Morely contends that as technology becomes more individualised and personal, the private space of home is less so, and therefore 'personalised media delivery systems' are gradually eroding family time together (p. 31). Morely cites the example of personal music devices like Walkmans or the now more prevalent equivalent of the iPod, through which teenagers can now create their own 'autonomous space' when at home and out in public space.

The sentiment of a mobile private space created through the use of personal music devices like the iPod and the corresponding earbuds or headphones worn by their owner is echoed by Walsh in his discussion about the use of such devices in public transport (2009). But personal devices such as iPods are not only used in public space, they are also being used in private space. Possessing individual technologies, argues Morely (2006), leads to less of a private family space. If these devices are used in both public and private spaces, then family space is gradually eroded by publics – such as the media - entering the home through the use of personal communication technologies like mobile phones and the Internet (Bakardjieva, 2006; Green et al., 2004; Morely, 2006).

There is a positive aspect to this widespread use of personal technologies, however. Gergen also believed that using dialogic communication technologies such as the mobile phone would increase the intimacy and depth of relationships. Individual devices such as the mobile phone enable direct contact between individuals, such as children and their divorced parent, without a third party, increasing the intimacy

between parent and child, who are often geographically separated (Haddon and Vincent, 2004; Haddon, 2006; Vincent, 2009; Yarosh et al., 2009). This 'flow' of movement between households that arose was observed during research in the 1990s was noted by Haddon (2006). Mobile phones offer possibilities for creating and enhancing intimacy in such a situation. In a society where divorce rates are climbing, this is a positive outcome of the change from communal to personal communication technologies.

3.4. Domestication and multimodal connection

Another side to the domestication of individual and private devices is that family members with more than one device and form of connectivity can reach and be reached through multiple forms of connection - what Schroeder calls multimodal connection (2010). Schroeder identifies with the multi-set household described by Morely and Silverstone (1990) and Ling and Thrane (2001, 2002), but extends their perspective. In the communal era technologies were single purpose contends Schroeder, whereas now technologies are multi purpose (2010, p. 78). Digital television sets, computers, mobile phones and gaming devices are all converged devices offering multiple purpose. The mobile phone is a converged device offering a phone connection, Internet connection, alarm clock, compass, online shopping, online banking and numerous other functions and online applications.

Shroeder extends the perspective offered by Morely and Silverstone by noting that while there are multiple devices, there is also greater duplication of applications across devices (2010, p. 78). Mobile phones with Internet connection can screen television online through webTV stations, or download clips through YouTube or other online repositories (Burgess and Green, 2009; Goggin, 2006). The new digital television sets can read and send emails, confusing end users as to whether they are watching television or using a computer.

Most importantly for families, this greater range of devices that are Internet connected offers possibilities for dialogic communication and engagement. As mentioned in the introduction, 'Connected Space' is a construct that enables a conversation to continue irrespective of time and spatial constraints. These two

elements, or lack of them, are important for continual familial conversation. In the past, communication between familial generations was asynchronous if it relied on the dissemination of written communication and photographs. Asynchronous communication was possible through the use of the telephone. Now a greater variety of devices and multimodal connectedness continues and expands the space rather than limiting it. For families this can take the form of SMS, emails, phone calls, video calls using Skype, or photographs posted to Facebook. Schroeder posits that multimodal connectedness is about communicating across devices so that people can use the various modalities to 'maintain their connections with each other in everyday life' (2010, p. 79). In a sense starting a conversation on one device that can then be continued across multiple other modes.

3.6. Conclusion

Individual, Internet-connected, portable devices have become the preferred method of communication over the last decade. The trajectory has moved from a communal sharing of telephones and computers to individual and portable devices. Privacy, rather than content, is king. Dialogic communication devices are now highly converged, multi-platform, and increasingly ubiquitous in order to perform a range of everyday tasks. These ubiquitous and individual devices enable people to perform tasks irrespective of location and without communal assistance or interference.

Each of the theoretical frameworks discussed in the early part of this chapter offer different perspectives of adoption. The SCOT theory offers a sociological perspective from the end user perspective which is useful when considering *developing* technologies; Cowan's consumption junction is from the consumer perspective *at the point just prior to purchase*; Rogers' diffusion of innovations theory offers not only a perspective on *when* people diffuse technologies but also a category of adopters; whereas Wyatt's perspective assists in constructing a picture of people who are less likely to adopt or are non-users of technology. The final perspective is that of domestication.

The domestication framework provides a relevant and contemporary way to investigate technology use not only within the home, but also across households and

from within a context of mobility. In this individual and mobile, the framework also provides the flexibility to investigate technology from an end user perspective irrespective of time and spatial constraints. When the domestication framework was initially conceived, it was conceptualised for communal technologies such as the television set. However, it can be equally applied to individuals and is particularly relevant to the multiplication of technologies within households.

The four-stage framework of appropriation, objectification, incorporation and conversion can be adopted within the context of the research question for this thesis, 'How are the adult generations within a family communicating using digital communication technologies?', and assists in identifying issues for familial generations in communication practice. The literature discussed in this chapter addresses these questions, specifically the types of technology involved, and the everyday issues families encounter using technology.

So how does this study begin to research familial adoption of digital communication technologies? The following chapter describes the methodology used for this study, drawing on the work on domestication undertaken by Silverstone et al. as part of their work at Brunel University. The method also draws on other researchers from other disciplines in order to inform the context, such as Bott and her experiences of the work involved in recruiting participants. The results chapters that follow (5, 6, 7 and 8) will explore how the family members appropriate, objectify, incorporate and convert a technology such as a computer, mobile phone, or web based application like Skype and integrate it into the domestic culture of their family.

CHAPTER 4: Methodology

What we seek to do with qualitative research on families is not to count the number of families exhibiting some set of characteristics, but to understand how some families give insight into the meanings of their experience.

(Daly, 1992, p. 4)

4.0. Introduction

The previous two chapters explored the wider context for this thesis, which is situated within the familial communications environment. Chapter 2 explored definitions of family and how family is defined within the context of this thesis. The definitions of familial generations used in this study are: 'youth', the youngest generation who have no children; 'middle adults', who have children; and 'older adults', the third generation because they have grandchildren. However, it is the middle adults who are central to this study's exploration of how families are communicating using digital technologies. Chapter 3 explored Connected Space and the technological environment that underpins the ways in which families now use digital technologies to communicate with each other. This is the challenge for contemporary families – managing the constantly evolving technological revolution in an era when not all generations, nor in fact individuals within generations, are communicating using the same devices and applications.

This chapter outlines the methodology for the study. It provides an overview of the design and implementation of the data collection for investigating the research question 'How are the adult generations within a family communicating using digital communication technologies?' The study uses a quantitative online questionnaire to understand the ways in which people interact with their family members. The results of the online questionnaire are explored from the perspective of the middle adult respondents. The qualitative data collection method of face-to-face interviews

explores the interplay between the middle adults and older adults in order to understand some of the complex interactions that occur between the two familial generations.

4.1. Designing a methodology

Constantly changing technology provides a challenge when designing a methodology to use across familial generations. It would be difficult to ensure that all family members would be using the same technology in order to communicate with each other at any particular point in time. A decision had to be made as to whether to focus on a technology that was in ubiquitous use, such as mobile phones, or to be more innovative and try to capture a snapshot of how families were communicating across a spectrum of technologies. Drawing on the experiences of previous researchers working with families, the design took a sequential mixed method ethnographic approach that included library research, an online questionnaire using Survey Monkey, and face-to-face interviews with individual family members. This method enabled a snapshot to be taken to gain valuable insight into how the generations are communicating using digital technologies.

In creating a design methodology the researcher drew upon previous research by the Brunel University team, Bott, and Daly, as all three research teams had studied their individual interests within the context of family. This previous research took on distinct forms. Daly's was desk based, whereas both Bott and Brunel had direct contact with participants. The findings of Daly's desk research into the nexus between qualitative research and characteristics of family contributed to this study's design. Some of the useful findings from Daly's study were the need to ensure that families are seen as distinctive focuses of study; that it may be difficult to gain access to the private sphere of families; and that families can be studied both in parts and as a whole (1992). Bott's research in the 1950s was from a sociological perspective and it investigated the social networks of spouses among 20 London families (1971). While the subject matter does not bear direct relation to this study there were some points in common that were relevant and useful. Importantly, Bott found it difficult to recruit participants for her study, a consistent theme in this type of research. The

Brunel team also found it difficult to recruit participants for their study. The seminal work of Silverstone, Hirsch and Morely conducted in England during the 1980s investigated the moral economy of households in relation to media. The researchers were interested in how media was domesticated into the homes of their participants. The media they investigated included television, radio and the telephone.

A key factor to consider in this study's design was the possible difficulty in recruiting families. As mentioned above, the Brunel University study reported difficulties in recruiting families for their study. Their situation was similar to that of their contemporaries Bott and Wallman whose work they drew upon (Bott, 1971; Silverstone, Hirsch and Morely, 1991; 1994; Wallman, 1984). The Brunel study tried to recruit families firstly through a market research recruitment agency and then through schools (Silverstone et al., 1991, p. 209). Using a market research recruitment agency proved expensive, and recruiting through schools attracted a limited number of participants that was reduced further once the families were matched against criteria and either the family or the research project was found unsuitable (Silverstone et al., 1991, p. 209). In the main, recruiting families proves to be time consuming and often results in a low participant rate. The difficulty of family recruitment along with rapidly changing technology suggested that a mixed method approach or participant observation approach which kept some distance from both the technology and the people involved would be a good solution for this particular study (Gans, 1999).

Another influence from the work of Bott, Daly, and Brunel was the concept of developing a methodology based on ethnography. In terms of defining ethnography, Silverstone contends that ethnographies are specific to the project, and that 'all ethnographies require, in large measure, the reinventing of the methodological wheel' (1991, p. 206). Brunel approached ethnography from an anthropological perspective of 'the long conversation', that is, a conversation held through a series of exchanges between the researchers and participants (Silverstone et al., 1991). The Brunel University study recruited 16 families for seven different forms of data

collection over a period of months (Silverstone, Hirsch and Morely, 1991, pp. 212–221). Using a team of researchers the Brunel University project conducted perhaps the most comprehensive data collection on families ever undertaken by communication researchers with families.

Key to the final design for this study was the flexibility required to collect data about digital technology adoption and practice across the three generations of ‘youth’, ‘middle’ and ‘older adult’. As discussed in Chapter 2, this study follows a familial generational approach where generations can be defined as:

- * ‘Youth’ – the youngest familial generation who have no children
- * ‘Middle Adult’ – the generation who have children or whose siblings have children
- * ‘Older Adult’ – the generation whose children have grown up and produced grandchildren

Therefore, the method designed for this study used both an online questionnaire and face-to-face interviews with family members. Using two different methods can ‘offer advantages not available through the deployment of either method alone’ and can often highlight intersections in method (Benoit and Holbert, 2008, p. 619). The online questionnaire and interviews were seen as complementing each other while at the same time asking different questions (Benoit and Holbert, 2008, p. 622). The online questionnaire provided context for the middle adults and enabled the researcher to understand their familial position. In-depth face-to-face interviews facilitated the collection of anecdotes, specific insights into shared meanings, and the unique dynamics and interactions of family that were important in gaining a deep insight into the relationship between the adult familial generations (Daly, 1992).

4.2. Library-based research

Initial investigations for the literature review and development of the research design for the empirically based research were undertaken using a range of library-

based sources. These included online databases, electronic journals and books written by key academics. Independent and industry reports were also consulted, including the annual Australian Interactive Media Industry Association (AIMIA) Mobile Phone Lifestyle Index; and reports from Australian government departments such as the Australian Communications and Media Authority (ACMA), the Australian Bureau of Statistics (ABS); the US-based Pew Internet & American Life Project (Pew Internet) reports; and areports of the International Telecommunications Union (ITU).

4.2.2. Identifying Technologies and Applications

Library research investigations identified nine potential methods of communicating. The potential technologies for mobile telephony were voice, SMS, and MMS. Potential technologies for the Internet were email, family domains and websites such as blogs and web photo albums, Skype or VoIP, and instant messaging. These nine communication technologies were widely available in 2005 when the study began and for some users, well established within Australian society. The less widely known or used technologies within the Australian context at the time of the survey – such as Skype and VoIP – were nevertheless included to allow for the responses of early adopters or lead users among the participants.

Social networking sites such as Facebook did not exist in 2007 when the questionnaire and the majority of interviews were conducted. Use of iPods was limited, and the iPhone did not arrive in Australia until the middle of 2008. While provision was made in the questionnaire responses for contemporary technologies and applications, it was not expected that participants would necessarily be using them. Again, they were included to cover the possibility that some participants may be early adopters, but there was no underlying expectation that family members would be using them to communicate between each other since these devices were at that stage far less common. It is important to remember when considering the adoption of various technologies that the focus of the study is how the different familial generations are communicating with each other; therefore the emphasis is on the communication practice rather than the technologies themselves.

4.3. Data collection

In this study there are two forms of data collection: a quantitative online questionnaire and face-to-face interviews. The quantitative online questionnaire is used to build a broad picture of how people interact with family members, while the qualitative data collection of face-to-face interviews helps to increase understanding through the reflections of those interviewed. The methods for the online questionnaire and interviews are discussed in this chapter. Discussion of the method for the online questionnaire will include its structure (4.3.4.), writing (4.3.5.), screen layout (4.3.6.), testing phases (4.4), respondent recruitment (4.4.3.) and data analysis (4.4.4.). Discussion of the less-complex interview method will include the recruitment process (4.5.2.1), selection of interviewees (4.5.2.3.), use of interviewees' homes as locations for the interview (4.5.4.), giving interviewees a 'voice' (4.5.5.), and coding the interview transcripts (4.6).

4.3.1 Online Questionnaire

4.3.1.1. Introduction

Both online respondents and interviewees filled out the self-completion questionnaire so that it could be used as a baseline for the project. Of the 11 interviewees, only two older adults David and Linda did not also complete the online questionnaire. The final questionnaire comprised 58 questions. There was a mix of question types in the online questionnaire, including radio buttons, multiple choice, fixed responses, free-text boxes, and pull-down menus.

The questions were organised into 4 sections. The sections were titled:

- * About you and your family
- * Technology and keeping in contact with your family
- * Family merchandise
- * Internet or mobile?

A copy of the questionnaire is set out in Appendix 1.

4.3.1.2. Advantages of using an online questionnaire

As a relatively new method of data collection, online questionnaires offer some

advantages over the traditional hardcopy method. For instance, the researcher can design, upload and manage the entire process online, keeping the cost of questionnaires and the entire data collection low. In contrast, paper copies require access to a mailing list, and postage charges apply for distribution (Bryman, 2004, p. 136). Another disadvantage of paper questionnaires was the researchers' reliance on respondents answering the questions and returning their responses by post. This often resulted in a low return rate (Bryman, 2004, p. 135). If the questionnaire can be completed when received by email, the response rate is likely to be larger. The completion rate could also increase if respondents circulate information among other potentially suitable participants (Murthy, 2008). Increasing the circulation pool allows a research to reach a larger number of participants. For an online questionnaire, this has the advantage of providing context for interviews. For this study, being able to reach people online meant that individuals from all states of Australia could participate. In the final results respondents came from four states: NSW, QLD, Tasmania, and Victoria.

4.3.1.3. Designing the online questionnaire

The aim of this questionnaire was to build a profile of generational domestication of digital technology. Therefore the central focus of the questionnaire was to draw out elements of generational communication practice. The questionnaire needed to cross over multiple themes about technology ownership and practice, and to be easily read and understood by all three familial generations.

In order to design a questionnaire, desk investigations were undertaken to better understand contemporary questionnaires and their approaches. Particular questionnaires such as those designed and used by Pew Internet, the Oxford Internet Institute (Wajcman and Haddon, 2005), and Andrew (2004) offered insights into the types of questions posed in contemporary studies of end user adoption of technology.

The challenge was to design a questionnaire that reflected the diversity of familial generations and values of the respondents. Often quantitative methods such as

questionnaires run the risk of ‘distort(ing) the realities of ordinary life by dealing with people as “units of population” (Wallman, 1984; p. 43). In order to provide a more accurate snapshot, a pilot was held so that appropriate responses to the fixed questions could be sought. The final questionnaire also contained some free-text response boxes so that respondents could provide their own personal reflections and responses.

4.3.1.4. Writing the online questionnaire

Two key strategies were employed in the writing of the online questionnaire questions. The first was in relation to the form of the questions and the second in relation to building common ground. With regards to the first strategy, a variety of different question types were used – a mix of closed and open question types, including some free-text boxes. This decision was made to make it possible for respondents to contribute personal responses. The design of many questionnaires actively discourages personal responses by only using closed questions (Brace, 2004; Bryman, 2004). Closed questions take various forms including radio buttons, multiple responses, and drop-down boxes. In this questionnaire, radio buttons were used for questions containing a single part and requiring a single response. In this study, single response questions coincidentally often acted as path changers in the flowchart such as Question 8 that asked, “Do any of your family live overseas?” Drop-down boxes were used for questions with multiple parts, and multiple response options, but for which a single answer was required for each part. An example is Question 9, which asked respondents, “Who in your family currently live overseas? And in which country are they living?”. The third form, multiple-choice buttons, was used when multiple responses were required. This enabled respondents to choose multiple options. For example, Question 12 asked respondents to “Please tick items on the list that you use in everyday life”.

The use of closed questions is common in most industry-based questionnaires such as those run by Pew Internet for Internet research in the USA. Advantages of using closed questions include enabling greater accuracy in coding, clarifying the meaning of questions for respondents, and easier completion (Bryman, 2004, p. 148). In this

questionnaire, twelve questions (Q5, 12, 21, 23, 24, 25, 27, 28, 34, 40, 55, and 58) provided respondents with an opportunity to write additional comments through the provision of an 'Other' comments box. In this study, the use of an online questionnaire also meant that respondents could make contributions and respond accurately without the risk of handwriting being misread (Brace, 2004, p. 159). However, while a comment box was provided for those twelve questions, few respondents chose to use it.

The second key strategy in the writing of this questionnaire was to structure the questions in such a way that they slowly built common ground. In an online questionnaire where the participants are unknown to the researcher, building common ground as the questionnaire progresses is important (Clark and Schober, 1992, p. 17). In this study where the respondents were completely unknown to the researcher, it was difficult to structure the questions about people's use of technologies. Technology is constantly evolving and people's use of it varies, so it was important to write questions using appropriate words and phrases that anyone could understand. As discussed in detail below (see 4.5) a pre-pilot test and a pilot test were held prior to the live launch to ensure that available responses were appropriate to respondents.

4.3.1.5. Questionnaire layout on screen

Consideration was also given to the layout of the questionnaire on screen. The questionnaire was accessed through the Monash University website using a link circulated with the call to participate. On all questionnaire screens was a copy of the National Centre for Australian Studies (NCAS) logo, where this PhD study was based. The presence of the logo, opening ethical statement, and explanatory statement acted as validation of NCAS support of the research. All pages included the logo and featured the centre's official colours. In order to participate, the respondents had to agree that they were over 18 years of age and Australian residents. Respondents then clicked on a button that would take them through to the questionnaire itself.

The questions were divided into sections by the four topic areas: 1. About you and

your family; 2. Technology and keeping in contact with your family; 3. Family Merchandise; and 4. Internet or Mobile? For ease of understanding, new pages were created for each section and for each question. This is another advantage of an online questionnaire; respondents can simply scroll down the page rather than having to turn over a page. It also means that the question and response choices can be kept on the same screen, making it predictable for respondents (Bryman, 2004, p. 140). A timeline, located at the top of the screen, was also provided for respondents so that they had an indication of their progression at any point in time.

4.3.1.6 Pre-pilot testing and pilot testing the online questionnaire

The online questionnaire was pilot tested for a number of reasons. First to test whether the questions themselves made sense to the respondents and whether the wording of the question accurately reflect the question's purpose. Second, as there was a large number of closed questions with set written responses from which the participants would choose, it was important to ensure that these responses were in keeping with choices that would be made by participants. It was important to try to aim for accurate responses that would reflect what respondents were doing in practice. Third, there was a logistical need to measure the time taken to conduct the questionnaire so that this information could be given to participants at the beginning of the questionnaire.

There were two rounds of pilot testing. The first round was an informal reading of the questionnaire by a group of colleagues mostly familiar with the researcher's work and referred to here as the pre-pilot testing group. This group was important as it provided the researcher with an initial impression without the effort required for a full pilot study. The questionnaire was distributed electronically before the meeting so that people had time to read through it. The group then participated in an open discussion about the questions, including how they were read by the group members, whether the responses were an accurate reflection of how they would have liked to respond, and other additional feedback deemed necessary. This group comprised the researchers' supervisors, two PhD students, and a research assistant.

The pilot study was a more formal process. A call for participation was made to the students of the NCAS at Monash University. To recruit people for the pilot, the researcher attended classes, spoke briefly about the project, and asked for participants. These two early stages of testing the questionnaire design are explained in greater detail below.

4.3.1.7. Pre-pilot Testing

Importantly the pre-pilot testing raised an issue in relation to the responses to questions by different generational groups. One question in the pre-pilot test questionnaire asked, “If you changed your mobile which applications and personalisation features would you miss most?” In the pre-pilot test group, two participants were confused by the notion of changing their phone. Changing their phone was not something they could contemplate: they would only change their phone if they lost it. Both of them thought that if the wording was altered from ‘changed’ to ‘lost’ then the question would make sense. When the question was posed to a younger participant, and of a different gender, they had no trouble answering the question as set. When the researcher discussed this particular issue with them, they felt it would be odd to substitute ‘lost’ for ‘changed’ because this pre-pilot tester regularly changed his phone but would not simply change phones because he had lost one. The inference within the sentence was different for him.

This example illustrates the subtle differences between generations. The different perceptions of ‘lost’ and ‘changed’ in reference to a particular device shows a generational difference in attitude. It might also explain the behavioural differences which the question had originally been designed to draw out. Another question asked respondents which features they used the most on their mobile phone? The researcher hoped that respondents’ answers to this question would reveal the level of exposure to their device and how skilled they were in using it.

These examples illustrate the difficulties faced when designing a questionnaire for a multigenerational group of respondents. However, the researcher decided that it

was better to have one questionnaire for all respondents so that it was a more accurate reflection of everyone's usage and practice of technology. Therefore these questions were removed in the final questionnaire.

4.3.1.8. The pilot test

In the second round of testing – the pilot study, the online questionnaire was pilot tested by 13 volunteers from the NCAS at Monash University. This round of testing sought feedback on whether the answers provided to the questions were appropriate, whether there were too many responses from which to select, and whether the questionnaire was logical and easy to follow. This round of testing was a more formal process. Ten students responded to the call for volunteers. As they were a mix of undergraduates and postgraduates, they provided a good range of ages and experience levels. Two staff members, one academic and one from administration, volunteered their services, as well as an independent volunteer connected to the university but located off campus during the testing period. The students were unfamiliar with the researcher's work, and while the three non-students had a general idea that the research was about families and new technology they were unfamiliar with the researcher's work or intentions.

The students tested the online questionnaire in a small computer laboratory. There was a maximum of four testers in each session. The two staff members tested the questionnaire at their work desks. The third located off campus completed the online questionnaire remotely. Those pilot testers who were physically present on campus were handed a special worksheet that needed to be completed as part of the task. The sheet provided space next to the individual question numbers to write down any problems they may have experienced in answering the questions. While the researcher was available to the students in case they had any queries, pilot testers were encouraged to write comments on the sheet provided, and to be as independent as possible in order to replicate respondent conditions for the live study.

Two issues were highlighted by the pilot study: the use of the term 'elderly', and a perceived lack of skill or awareness about technology on the part of one of the participants. In relation to the use of the word 'elderly' in the draft questionnaire, when the pilot tester from this generation began the questionnaire, they felt confronted by the term used for their generation. In their debrief, they expressed their objection to the term and explained how it had niggled at them throughout their testing of the questionnaire. At the conclusion of the questionnaire, they had immediately searched the Internet for alternatives that made them feel comfortable. They rejected 'mature', found 'wrinkly' acceptable, and were unhappy for either to be used in the questionnaire.

Initially, 'elderly' was the term chosen by the researcher simply because it was used by intergenerational and family studies academics (Haddon 2000; Ling 2006). While the researcher had considered how the respondents might view the use of the term it was not until pilot testing that it became clear that it needed to be revised. The researcher then referred to other writings from a communication perspective about the use of the Internet by the elderly and noted that several including Aula and Käksi used the term 'older adult' (Aula and Käksi, 2005; Czaja and Lee, 2007). This term was suggested to the pilot tester who had objected to 'elderly'. They found it suitable and were quite happy with the term. Thus 'older adult' was the term used in the final questionnaire.

The other issue that arose during the pilot was the notion of diversity of use. When some pilot testers read the questions, they were not familiar with some of the technology referred to. As a result, they were intimidated and confused. To address this issue, additional paragraphs of explanation were included in the final questionnaire. Other pilot testers were overwhelmed at their own lack of exposure to some of the technology and communication methods available. They had felt that their level of exposure to technology was good until they became aware of an even greater diversity of technology and uses for technology than their own. To address this concern that respondents may become tired of trying to answer questions that were not relevant and thus succumb to 'respondent fatigue' (Bryman, 2004, p. 134),

the section of the draft questionnaire that asked questions relating to a participant's skill and knowledge of their mobile phone was removed.

4.3.1.9. Calls for online questionnaire respondents

The calls for participants for the online questionnaire were published and circulated through the weekly *Monash Memo* on 29 August 2007 and 5 September 2007. The *Monash Memo* is an online newsletter hosted on the university website, promoted weekly by the circulation of a global email which includes embedded weblinks to published articles and information. The online questionnaire was made available for participation from 27 August until late October 2007. On both the call for participation advertisement and the questionnaire, there was a link to the study website page hosted by the NCAS. The study website page included information regarding the study and the researcher. This provided potential participants with an opportunity to learn more about the study before volunteering to participate. The study website page also included information about ethics clearance and volunteering consent clarifying that the study had the approval of the university and establishing further credibility. Potential respondents were also informed that based on completion times in the pilot study, the expected completion time for the final questionnaire was between 10 and 20 minutes. The time taken to complete the questionnaire depended on the pathway followed by the respondent. The full text for the calls for participants can be found in Appendix 2.

4.3.1.10. Methods of data analysis for the final online questionnaire

The final online questionnaire was conducted using SurveyMonkey online software. A complete list of questions and possible responses is set out in Appendix 1. SurveyMonkey provides a quick overview of initial results, but further investigations that enabled the cross tabulation of the variables were conducted using Statistical Product and Service Solutions (SPSS).

In total there were 68 questionnaire responses, with one incomplete questionnaire. These 68 responses included nine of the interviewees who subsequently took part in the face-to-face interviews. The two older adult interviewees, David and Linda, did

not complete the questionnaire as their dial-up Internet connection dropped out each time they made an attempt. Some respondents replied in the free-text boxes, so before any results were compiled, the responses in these free-text boxes were redistributed – when possible, among the set responses, but in the case of some questions (5, 21, and 23) an additional response was included in the final analysis. For instance, Question 5, ‘How would you describe your living arrangements?’ drew a number of ‘other’ responses. Three new categories were added to the previous categories in the analysis stage. In Question 5, some respondents indicated that they were ‘living as a couple and with a parent’, ‘living with a sibling’, ‘living with my partner with 1 child full time, and one child part time’. The second question, Question 21, ‘Which media do you use to keep in touch with your family as a group?’, gave rise to three additional new categories: email, landline phone, and no group contact. All three were included in the final analysis. For the third question, Question 23, ‘Do you keep a selection of photos featuring family members...?’, one additional category was added in the final analysis of this question: ‘purse or wallet’ (10).

The variables were all categorical – that is they were descriptive statistics and not numerical in value, such as age, and therefore unlikely to be tested for mean or standard deviation (Pallant, 2010, p. 55). Age ranges were used rather than exact age so that respondents would be more likely to provide an accurate response (Pallant, 2010, p. 9). As there were a large number of questions that featured multiple response formats, a total of 418 variables were used. At this stage in the analysis process the middle adult respondents’ results were isolated from all the other results. Middle adults were identified through the use of Question 10, where respondents were asked to self-identify themselves with a particular generation. Other results that were removed included four questionnaire respondents who did not identify themselves as being of a particular generation – that is ‘youth’, ‘middle’, or ‘older adult’ – as requested in Question 10. These responses were removed in any cross correlations specifically in reference to middle adults by using the ‘exclude cases pairwise’ option in SPSS (Pallant, 2010, p. 58).

4.4. Participant Interviews

4.4.1. Introduction

The second form of data collection used a qualitative approach consisting of in-depth unstructured interviews with family members. While the online questionnaire provided an overview of how people may communicate with family using digital technologies, the purpose of the interviews was to gain deeper qualitative insights into how the generations were communicating with each other. As discussed earlier, qualitative methods reveal subtle negotiations that may occur between generations, the nuances of which do not appear in questionnaires.

An unstructured interview method was chosen to ‘get a “window” on reality from the point of view of a participant and to allow them to tell their story as they wish, identifying the issues that are important to them’ (Bouma and Ling, 2004, p. 77). As part of the exploratory process, it is important to hear the ‘voices’ of those interviewed, rather than confirm the researcher’s thoughts or opinions (Caron and Caronia, 2007; Gans, 1999). An unstructured interview is an appropriate method to discover the nuances of family meaning, as well as the interactions and dynamics of technology domestication within a family.

While domestication studies such as that undertaken by Brunel typically use a semi-structured interview method an unstructured interview also provides interviewees with an opportunity to talk freely about their use of technology rather than to be asked a set of questions that in some instances directs the outcome of the research (Bryman, 2004). In this instance, the unstructured approach revealed the use of Skype that given the low adoption rates in Australia at the time may not have been revealed if a more structured approach to data collection through semi-structured interviews had been used.

As set out in Chapter 1, the original intention was to interview all three generations – ‘youth’, ‘middle’ and ‘older adults’ – from within the one family. However, this study focuses on the less well-explored generation of middle adults. It became clear during

the interview recruitment process that while people were happy to volunteer their own services, they were hesitant to participate if it was dependent on both generations also volunteering to be interviewed. In the final group of interviews, it was only possible to interview two generations from within one family. However, both the middle adults and older adults who participated provided invaluable reflections on their relationships with the other generation.

While no interview questions were used as part of the introduction to the interview, all interviewees were asked to undertake the online questionnaire prior to being interviewed. The researcher was then able to glean information about their technology ownership and habits prior to the actual interview. In a sense, undertaking the online questionnaire first acted as a pre-interview (Janesick, 2004, p. 387). In turn, the interviewees were also provided with some context for their interviews. At the start of each interview a short period of time was spent in warm-up discussion, after which the researcher would direct the conversation towards an initial topic for interview discussion. This is an approach adopted by other researchers (Bott, 1971; Janesick, 2004). Sometimes this initial topic was chosen from preliminary discussions held with the participant. It may have been a simple anecdote the participant thought the researcher may be interested in, and the researcher recalled the anecdote as a way of easing the participant into the interview. Using anecdotes is a common way of building rapport with participants (Bott, 1971; Janesick, 2004). At other times, the information provided as part of their online questionnaire was the basis of the informal chat that followed.

The most important aspect of the methodology was its role as an exploratory study rather than a study designed to confirm a particular mode of communicating (Brewer and Hunter, 2006, p. 65). The focus was on discovering and exploring the interactions and dynamics within the particular families involved. As the aim of this study is to understand familial generational communication practice through the position of the middle adults, qualitative methods through interviews provided an avenue to 'observe patterns of interaction and the ongoing negotiations of family roles and relationships' (Daly, 1992, p. 4).

4.4.2.The interviews

4.4.2.1. Recruiting interviewees

Recruiting interview participants was limited to a narrow demographic of Monash University staff resident in Victoria, their families or people known to the researcher. This was a significant stipulation of the university's ethics committee for reasons of researcher safety. Therefore no interviewees were directly recruited from the online questionnaire.

To find suitable volunteers to interview, four advertisements were placed in the *Monash News* an electronic newsletter sent to the entire university via email once a week. The advertisements were placed on 29 August 2007, 5 September 2007, 26 September 2007, and 3 October, 2007. Some of the interviewees responded to this call for participation, others volunteered directly to the researcher after becoming aware of the project through third parties. The calls for participation are available as Appendix 2.

The three criteria for participation were that interviewees must be Australian residents over the age of 18 and using digital technology such as the Internet and/or a mobile telephone to keep connected with family.

4.4.2.2. Snowballing as a recruitment method

As discussed above in 4.1, researchers such the Brunel University team have identified problems with recruiting families to participate in their studies (Bott, 1971; Daly, 1992; Silverstone et al., 1991). Their work provides valuable insights into researching families and identifies a number of potential barriers and helpful tips in the recruitment method. Daly's findings highlighted the unique nature of the family social group and its impact on researchers attempting to gain access to the private sphere of families and negotiating research within this sphere (1992). For these early researchers, successful recruitment of families occurred primarily through networks of friends and colleagues. In contemporary studies this could be seen as akin to

‘snowballing’.

Snowballing is used by some researchers as an effective method to recruit participants who are considered ‘hidden’ or ‘hard to reach’ within society (Beins, 2004, p. 226; Browne, 2005, p. 47; Devine and Heath, 1999, p.1 2). Families are considered to be one of the ‘most closed and private of all social groups’ (Daly, 1992, p. 4). Daly considers it a challenge to gain access to families as they have boundaries that vary in their degree of permeability (Daly, 1992, p. 4). Normally hidden participants are those who are identified ‘with specific factions or lifestyles (that) can result in discrimination’ (Browne, 2005, p. 47). They may be individuals who would not normally respond to advertisements but would if personally approached, or who participate in a particular lifestyle but are not part of an organisation (Browne, 2005, p. 50). Even though the participants needed for this research were hard to reach, families who communicate using digital technologies are everywhere in our community. Making contact should not be difficult but early attempts in this study to make contact through relevant organisations – for instance, mothers’ groups – was stymied by the group organisers’ concerns about privacy implications. Although contact information for the individual members was available freely on the Internet, the Committee of the mother’s groups opposed any contact with their members. These potential participants can be categorised as hidden. There is also a strong need for privacy among families as demonstrated by the mothers’ groups. These are two characteristics that Beins identifies with hidden populations for which snowballing is recommended as a recruitment method (2004). Snowballing according to Beins ‘relies on the fact that an individual from a hidden population is likely to know others from that group’ and that the volunteers are more likely to be cooperative (2004, p. 226).

Snowball sampling however cannot be considered to be a representative sample of a given population; it is merely illustrative, as the researcher is unaware ‘to what degree the sample represents the larger population’ (Chadwick, Bahr, Albrecht, 1984, p. 66). Nevertheless it is in line with this study’s aim to provide a snapshot of familial communication. In a country the geographic size of Australia, making

representative comparisons is inappropriate as there can be significant differences in attitudes and use across regions (Cameron and Goggin, 2005). The approach of this study is to research families as 'examples of ... families, not as a random or representative sample' (Bott, 1971, p. 9). Another way to view the unrepresentative nature of snowballing is to consider an approach used by Hirsch called 'recognisable families' – that is, as long as the families featured are recognisable within the larger category of families in the community, then they could be considered as appropriate (1994, p. 222).

4.4.2.3. The interviewees

Eleven people answered the call for participants and volunteered to be interviewed as part of the study. Of the eleven volunteers, nine were resident in Melbourne at the time of the interviews, and the other two were resident in other Australian capital cities. All interviewees lived within Australian metropolitan areas.

Four of the interviewees were male (George, Simon, David and John), and the other seven were female (Amanda, Beth, Alice, Andrea, Linda, Vera, and Joanne). The names of the interviewees are not real; during the coding process, all participants were issued with pseudonyms to protect their identity. The balance of genders was unequal. One possible reason for this unequal balance is that men can be difficult to recruit in qualitative family research: often the woman becomes the spokesperson for the family and acts as its gatekeeper (Daly, 1992, p. 6). Typically family studies projects try to avoid relying on a single spokesperson or informant (Detzner, 1992). As this project focuses on generational aspects and interactions occurring within families interviewing one person is appropriate as they are not speaking for the entire family but rather about their own position and experiences within the family. The eleven interviewees were from eight families. They provided an individual perspective on their family members' interaction with each other and they reflected directly on their own personal experiences with the family into which they were born (family of origin), rather than the family that they created (Pahl and Spencer, 2004).

The families that were discussed in interviews were diverse. Alice and Beth were only children with few other relatives, whereas Andrea was an only child with an extended network of cousin. George, Simon, Joanne, Linda, David, Amanda, Vera, and John were part of typical families with two or three siblings. The largest group interviewed were middle adults. Following the definitions re-established in the introduction to this chapter, the middle adults are family members who have children, or whose siblings have children, and the older adults are family members with grandchildren. Older adults formed the second-largest group of interviewees. No members of the generation 'youth' responded to the call for volunteers.

While it is a small sample, these eleven qualitative interviews together with the 68 questionnaire respondents provide rich insights into the communication practice in Australian families. All the interviewees were also from 'recognisable' families (Hirsch, 1994). Some characteristics that made the interviewees' families recognisable were:

- only one in eight of the middle adults had no university qualifications
- three of the five female middle adults were only children – and all three were university educated with postgraduate qualifications
- none of the older adults had university qualifications
- half of the families were not affiliated with Monash University
- all the families had family members living overseas
- six of the eleven participants had children
- half of the families had children (or grandchildren) under 18.

In the following chapter, the nature and circumstances of the individual interviewees and their families is explored more fully.

4.4.3. Interview period

The majority of interviews were held in the summer over December 2007/January 2008; and two interviews were held in 2009. The significant difference in the second round of interviews was that the use of social networking sites such as Facebook had become more prevalent. None of the previous participants had used Facebook as a method of communicating with their families in that round of interviews. That said,

among the two later interviews only Amanda's family were connected via Facebook. As a result the only discussion in this thesis about Facebook or the use of any social networking sites is restricted to Amanda.

4.4.4. Home as the interview location

The initial formal interview for participants was held in their home. Being able to conduct the interview within the participant's home enabled the researcher to conduct some discreet 'unobtrusive observations' (Brewer and Hunter, 2006, p. 61). Unobtrusive observation forms part of a nonreactive data collection method that is in keeping with the values of participant observation (Brewer and Hunter, 2006, p. 61). It enabled the researcher to see interviewees' living spaces, observe the ownership and placement of media technologies, and examine family photographs. Being able to conduct the interviews in the home of the individual family member allowed the interviewer to observe their surroundings providing valuable context that enhanced the researcher's ability to ask appropriate and finely tuned questions during the interviews (Daly, 1992; Dickinson et al., 2003). The researcher was able to enter the 'life world' of the participant and access the private perspectives of the family (Daly, 1992, p. 5). Silverstone et al., Bott, and Wallman all interviewed their participants at home, as Bott's team had discovered that participants' recollections were often different from the reality (Bott, 1971, p. 23; Silverstone et al., 1991; Wallman, 1984). Being in their home provides the participant with identity support, and being among familiar items can act as a trigger for memories that in turn provide useful and pertinent information to the researcher (Dickinson et al., 2003). Engaging with participants outside their homes may well result in different findings. Bott found participants' recollections more reliable when at home (1971). If they are away from home, participants are not able to refer to material in their home such as photo albums or computers. Furthermore distractions outside the home may well alter their perceptions, and result in less information being provided to the researcher. Daly acknowledges that while families may deliberately hide private information from researchers, information that the family considers banal or mundane may also be hidden (1992, p. 5).

On a couple of occasions when either children or other visitors were present, the interview was moved to neutral territory such as a café nearby. For the follow-up interviews held with George and Simon, for example, a mutually convenient café or other location was used. All interviews were recorded using a digital recording device and independently transcribed at a later date.

4.4.5. Giving interviewees a 'voice'

As the second method of data collection, the interview provides a method for talking directly with participants and giving them a voice (Caron and Caronia, 2007; Gans, 1999). The first method of data collection, the online questionnaire did not allow the participants a voice as they were asked closed questions. Therefore providing interviewees with a voice gives researchers access to the valuable insights of the interviewees. In this study valuable insights came from the reflections of the middle adults.

4.5. Coding the interview transcripts

The audio files from each interview were professionally transcribed through an independent transcription service. Upon delivery of the transcripts the researcher deidentified the interviewees, assigning pseudonyms for each interviewees so that their identities remained protected. The filename for each transcript was coded by number and did not feature the interviewees' names. The analysis of the transcripts followed methods by Burnard (1994). A more detailed account of the analysis process is outlined in Chapter 6. In brief, the transcripts were read by the researcher and key topics marked on the transcripts. A list of topics was compiled from the transcripts. The initial list of topics comprised: Skype, mobile phones, landline phone, email, Internet, photography, production, digital media literacy, and domestic networking. A document table was then compiled that included quotations from each of the interviewees against the relevant topic, subtopic, and explanation.

Table 4.1 below shows the list of topics and subtopics:

SKYPE	Weekly call home to family	Frequency of calls/cost
SKYPE	Webcam	Difficulties with technology
EMAIL	Middles and youth	
MOBILE PHONES	Middles communicating with Older Adult family members	While away on holiday
PHOTOGRAPHY	Sending photos	Using email
PHOTOGRAPHY	Storing photos	Flickr
PHOTOGRAPHY	Displaying photos	Printed photos at work
PRODUCTION	Gifts	Framed photos
DIGITAL MEDIA LITERACY	Middles reflections on their own lack of technological skill	Mobile Phone
DOMESTIC NETWORKING	Task Assistance: Middles assisting older adults	Setting up Skype and webcams
DOMESTIC NETWORKING	Married couples and managing their tech needs	Setting up home computers with webcams and Skype
DOMESTIC NETWORKING	'Trick playing' between generations	Middles on older adults – changing screensaver to a joke tag
DOMESTIC NETWORKING	Purchasing equipment/Gift	Middle for older adult – mobile phone

Table 4.1: Topics and sub-topics from transcripts

From these initial codings, three topics were identified as being key results for discussion in this thesis: digital media literacy, mobile telephones, and Skype. The results of the coding are explored in Chapters 6, 7, and 8.

As part of the coding and thematic identification process, key quotes were identified and a general structure for discussion of the data formed. Interviewees reflected on experiences with individual family members and particular incidents within their experience of family use of technology. Interestingly, when tables were compiled by theme it became clear that each interviewee focused primarily on certain family members during their interviews. In most cases, interviewees focused their discussion around a single person or perhaps two rather than drawing upon a larger

group. It is unclear what this indicates, but perhaps it relates to weak and strong ties or, as Gergen contends, those with whom we have close vertical relationships (2002).

4.6. Conclusion

This chapter describes the design for this study and the data collection methods, drawing on a range of earlier studies conducted with families. The studies of Daly, Bott and the Brunel University researchers were among the research reviewed from a critical ethnographic perspective. While these are not contemporary studies, they are all studies conducted with families and their historical insights are still relevant. If anything we see how little has changed in relation to the study of family and in particular how the common difficulties associated with research into families remain problems today. Families are understudied, yet they are the largest consumers of technology – particularly once a device or application has mass appeal. Few are attracted to studying the family in its everyday usage of technology perhaps because it is considered banal when compared to studying early adopters and their adoption practices. From the interviewee perspective, individuals often censor themselves, thinking that what they are about to say may be banal when in fact it can provide rich material for researchers (Daly, 1992).

Studying family interactions is about the tedium of everyday life such as the negotiation processes that occur between generations in relation to consumption, incorporation, and domestication. Yet it is these everyday practices that create points of tension and negotiation in how we as individuals and family members interact with each other. Technology itself has shown us that it is the practices of the majority and not the minority that ultimately affect our day-to-day practices. Kraut and Fish in their study of the adoption of the video-phone demonstrated that we can only communicate with each other using common technologies and practices, and they are not alone (1995). As Sterne and many others have documented, the use of any technology outside the norm restricts our ability to communicate with each other (2003). Using the same technology as everyone else may also affect our ability to think how another group may think (Wyatt, 2003).

Most importantly to this study, families are generational. They are composed of individuals transitioning through different life stages, and their consumption and domestication practices will all differ. It is a constant challenge for family members to interact with each other in not only a constantly evolving technological revolution but also a familial one. The use of a quantitative online questionnaire helps to build a broad perspective on how people interact with family members. The reflections of both the middle during the qualitative face-to-face interviews helps to increase understanding as they consider their constant negotiation process within the familial communication landscape.

This chapter also introduces the participants who agreed to be interviewed in-depth about their domestication of digital communication technologies. In this brief introduction to the interviewees, the profiles show there is diversity among their families in relation to life stage and geographic location. More details about the interviewees are offered in Chapter 6.

So how do the people participating in the online questionnaire communicate with each other? What technologies do they use? And which other family members do they keep connected with the most? The next chapter, Chapter 5, explores some of the results of the online questionnaire and adds to the understanding of middle adults and their domestication of digital communication technologies.

Section 2: Results and discussion of how intra-generational communication is occurring between middle and older adults using the Internet, mobile phones and Skype.

CHAPTER 5: Keeping Connected as Family

Parental care evolves into the family, and the word family begins to extend itself further to include grandparents and cousins, and the people who become like relations...we cannot fail to be impressed by the human need for a steadily widening circle for the care of the individual. (Winnicott, 1965, p. 89)

5.0. Introduction

This is the first of four chapters that will detail and analyse the results. The focus of this chapter is the online questionnaire and a presentation and discussion of its results which were outlined in the previous chapter. This chapter presents a broad overview of the responses to the questionnaire. A detailed analysis of the interviews will follow in Chapter 6. As established in the literature review, middle adults are not commonly the focus of familial research. The focus of much familial research is on youth or the elderly. While this study is only able to provide a snapshot of how middle adults are using digital technology to communicate with family it does provide insights into their use and can be used as the foundation for further research. As a first step in the process this chapter provides a profile of the middle adults who participated in the questionnaire. The chapter also provides insight into the responses of the middle adults in relation to their use of digital communication devices such as laptops and phones.

The first part of the chapter outlines the main group of respondents, the middle adults (5.1 and 5.2) before discussing the results of the online questionnaire within the context of communicating with individual family members. The discussion includes an analysis of which technologies this particular group of middle adults uses in everyday life (5.3) and their perspectives on their use of technology (5.4) before considering which device the middle adults use most for familial connection (5.5). Middle adults keep connected with their family members or extended family

members in multiple ways. These middle adults communicate with family nearby (5.6.1) and far away (5.6.2) including family overseas (5.6.3). The questionnaire also asked respondents who they kept in touch with in their family the most and how (5.7); whether they kept in touch with specific family members and how (5.8); whether they kept in touch as a group (5.9); and whether they communicated in languages other than English (5.10).

5.1. Online Questionnaire Respondents

As discussed earlier in 4.5, the online questionnaire was open to Australian residents over the age of 18 who were members of the Monash community or known to the researcher. This analysis is based on 64 completed responses. In the initial part of the analysis, the responses were grouped according to Question 10, “Think about your position within your family. To which generation of your family do you belong?” The responses provided were ‘Youth’, ‘Middle’, and ‘Older Adult’. In order to help respondents to answer this question, an explanation was included about generational position.

For example, normally there are three living generations in a family. Children, parents, and grandparents. It is important to remember that the terms used do not reflect your age but rather your position within the family. This means that in this study, ‘youth’ are considered the youngest members of your family. It is tempting to think of ourselves as ‘youth’ and sometimes this could be you, but if you or your siblings have children then you belong in the ‘middle’ generation. If you are ‘middle’ rather than youth, then your parents are considered the eldest generation (of the three) and are therefore referred to in this study as ‘older adults’. If you are a grandparent, then you are an ‘older adult’. Your children are considered ‘middle’ and your grandchildren ‘youth’.

Of the completed responses, 42 identified themselves as middle adults, eight as older adults, and 14 as youth.

As the online questionnaire was completed without the assistance of an interviewer, the respondents categorised themselves into familial generations. Questionnaires without the presence of an interviewer are referred to as self-completed or self-administered questionnaires, hence the use of the term self-identified (Bryman, 2004, p. 543).

While people responded to the online questionnaire across all three familial generations, these results focus only on the 42 middle adult respondents. This provides a unique opportunity to focus the results on a familial group that is not generally investigated unless it is in their role as parents to youth. A main concern for parents of youth is security for their physical and emotional wellbeing when away from family. Digital technologies such as the mobile phone provide reassurance for both middle adults and their children (Wajcman et al., 2008). The daily micro-coordination of family movements and activities has been made possible through mobile telephones (Ling, 1998; Rakow and Navarro, 1993; Wajcman et al., 2008). The use of the telephone for social interaction is an ongoing issue that arose during landline telephony, and it has transferred across technologies to both mobile telephones and the Internet primarily as women and youth are seen to use the telephone too much for social chatting (Ling, 1998; Rakow, 1992).

The middle adults constitute a unique group to examine within the context of extant communication as this group has been largely overlooked. It provides an opportunity to understand how middle adults communicate with the other familial generations, especially the older adults. The middle adult and older adult relationship has not been investigated in communication studies. It is the intergenerational relationship between youth and their grandparents that is the focus of many studies as previously discussed in Chapter 2.

5.2. Who are the middle adults?

Questions 1 – 5 (see Appendix 1) were included in the online questionnaire in order to build a social profile about the respondents themselves. These included basic

demographic information such as gender, occupation, living location (by postcode), as well as some attitudinal questions asking respondents about how they viewed their own use of technology and the display of family photographs.

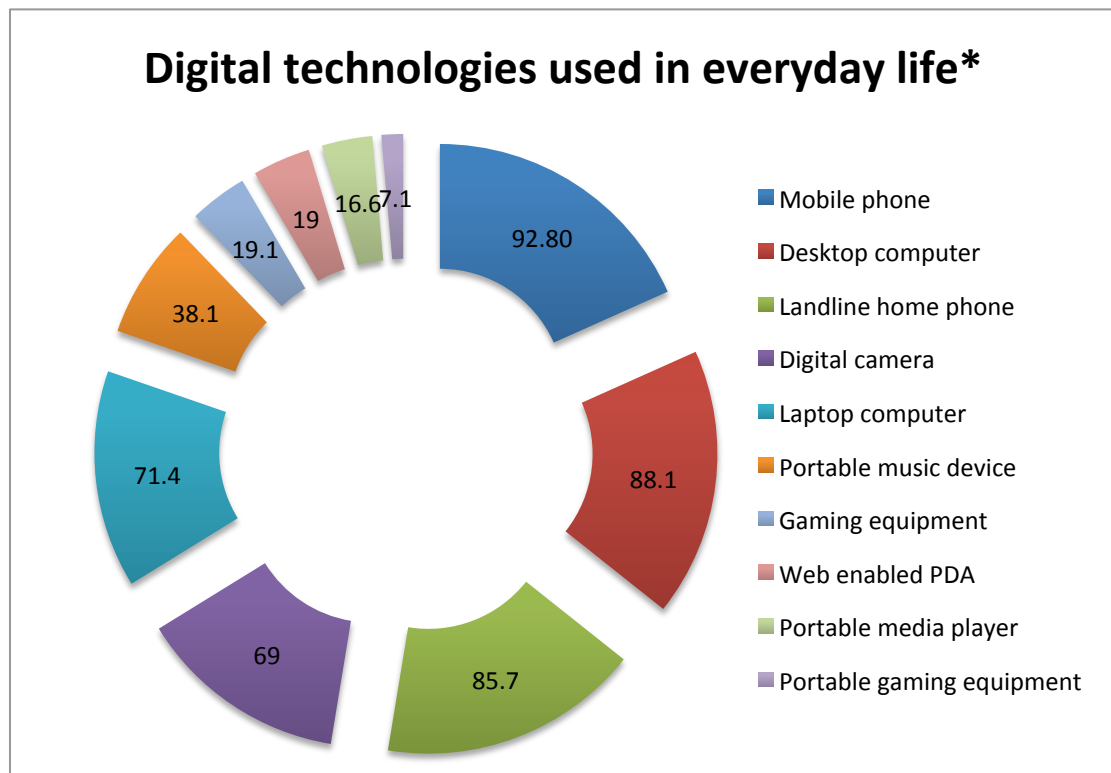
From the results there are 42 self-identified middle adults in the respondent group and a snapshot description of the middle adult could read like this;

The typical middle adult respondent is female, who lives as part of a couple with their partner with or without children, and who works outside the home.

As the majority of online questionnaire respondents were female the gender perspective is important in this study. Initially gender was not intended to form part of the focus within this thesis but upon reflection the issue of gender was embedded within all discussions of technology and it appeared most openly within the face-to-face interviews discussed in later chapters.

5.3. Technologies used in everyday life

The aim of this thesis was to gain insight from the family members involved about how they used technology to communicate. Question 12 asked respondents to “Please tick items on the list that you use in everyday life” and it was included in the questionnaire (see Appendix 1 for full list) to understand the breadth of technologies used by respondents. The results indicate that the middle adults are very familiar with a range of technology. Middle adults adopted digital technologies ranging from mobile phones, computers, and gaming to music devices (see figure 1 below for details). The results for the middle adults are fairly consistent with those from other studies on the inclusion of technologies such as computers, mobile telephones, digital cameras, and gaming equipment within the Australian home (ACMA, 2008a).



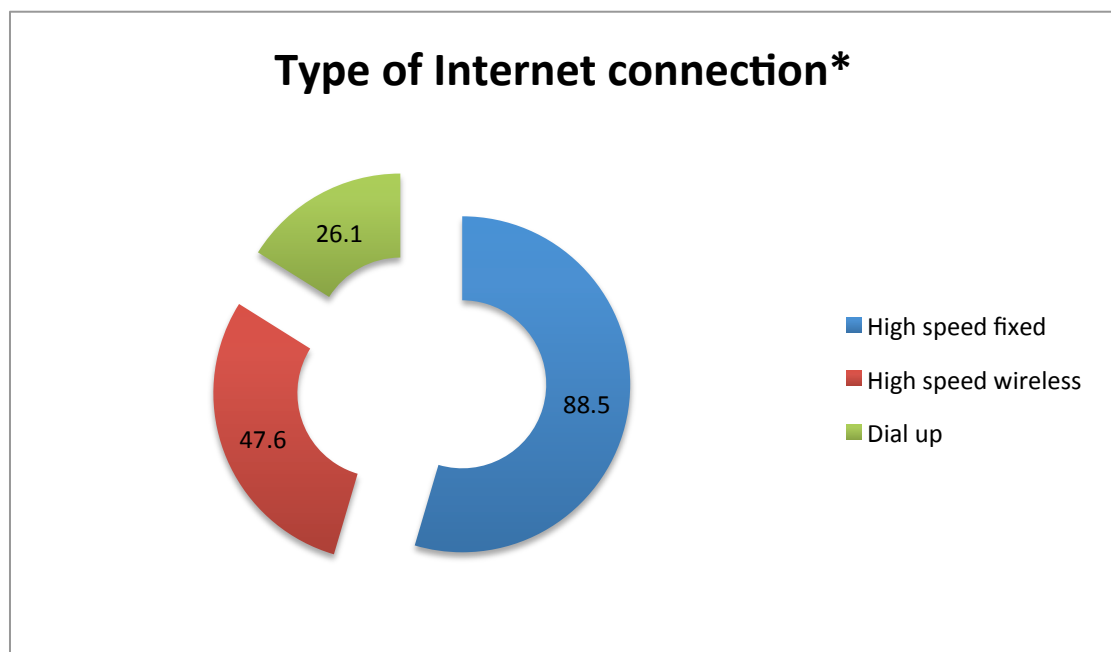
*Respondents could choose more than one technology.

Figure 5.1: Percentage of respondents using particular digital technologies.

As illustrated in Figure 1, the technology most used by middle respondents was a mobile phone (92.8%). This was followed by a desktop computer (88.1%), land line phone at home (85.7%), digital camera (excluding the one on their phone) (69%), laptop computer (71.4%), portable music device (38.1%), gaming equipment (19.1%), web enabled personal digital assistant such as a Palm or PDA (19%), portable media player (16.6%), and portable gaming equipment (7.1%).

According to ACMA in 2006/7 the majority of households still used their fixed-line phone and mobile phones interchangeably or as a 'complementary' service (ACMA, 2008, p. 5). Fixed-line phones were used when people were at home, and for longer calls, and mobile phones were used when out and about, and for calls between mobiles (ACMA, 2008, p. 5). Hence, during the time of running the online questionnaire in 2007 people used their fixed-line and mobile services as complementary rather than as 'substitution' services, where one phone was substituted for another (ACMA, 2008b, p. 6). This explains why the uptake and use of a landline phone at home is still high among the middle adults (85.7%), as it

corresponds to the complementary practices suggested by ACMA and predates the more dramatic increase in mobile phone usage noted by ACMA in 2011. In 2011, the landline phone was substituted in many homes by the mobile phone (ACMA, 2011). Young people are especially likely to live in a mobile-only household and one-third of those aged 18-24 were already doing so by 2010 (ACMA, 2009b, pp. 19-20). For the 50% of middle adults who have children still living at home and who place great demands on Internet use, the landline may still have a place in the home. The role of the landline may no longer be for calls, but it may play a vital role in ensuring the cost effectiveness of an Internet connection. Australian ISP Internet plans are more cost effective and offer greater download limits if they are bundled with a landline phone rather than standing alone (Telstra, 2011).



*Respondents could select more than one response.

Figure 5.2: Percentage of respondents using Internet access by type of connection in the home

The results of Question 15, “Do you have an Internet connection at home?”, indicated that the vast majority of the middle adults had an Internet connection at home (82.9%). Question 16 asked respondents, “In the last six months how often have you used these devices to connect to the Internet at home?” As indicated in Figure 2, respondents often connected using a high-speed computer connection

(88.5%) or a high-speed wireless computer connection (47.6%). Some middle adults still accessed the Internet using a dialup connection (26.1%). The selections of the type of Internet connection may rely not only on personal preference but also on the Internet Service Provider (ISP) plan as many ISPs bundle their services together. ISP bundles may include a landline phone, Internet connectivity, a television service, and mobile telephony. More sophisticated bundles include multiple mobile telephony accounts as well as 3G data plans for the mobiles, as well as optional data pack purchases. ISP customers who purchase a monthly Internet connection plan through their landline phone telecommunications provider are offered significant savings and incentives compared to stand-alone plans (Telstra, 2011). This is most likely the case here, since there was still a high adoption rate of landline phones by the middle adults in 2007, when the survey was conducted.

5.4. The middle adults' perspective on their use of technology

In order to gauge how respondents viewed their own use of their technology, the questionnaire included attitudinal questions asking about the use of the Internet, mobile phones, and family photographs. A Likert scale was used for each question providing respondents with five possible responses ranging from Strongly Agree to Strongly Disagree. The attitudinal statements about the Internet and mobile phone use feature in the online questionnaire as Question 17. The attitudinal statements about family photographs feature in the online questionnaire as Questions 29 and 30. In this section, the attitudinal statements are transcribed in italics.

5.4.1. The Internet

The Australian component of the World Internet Project (WIP) provides a valuable context for the study of Internet within Australian society at the time of the data collection. It states that in 2007, 72.6% of Australians accessed the Internet primarily using broadband (79%) with some still connecting using dial up (21%) (Ewing and Thomas, 2010, p. 1). This is a marked increase from 2000 when only 30% of Australians had an Internet connection at home (ABA, 2001, p. 3). Of those 30%, 64% of Internet-connected homes were connected via a single landline phone and only 5% were connected by cable (ABA, 2001, p. 3).

In 2007 the greatest users of the Internet were the employed (86%) and students (87%) with the unemployed (73%) and homemakers following closely behind (63%) (Ewing and Thomas, 2010, p. 2). Urban Australians (77%) were more likely to be Internet adopters than rural populations (65%) (Ewing and Thomas, 2010, p. 3). Australians accessed the Internet at home for nine hours a week, closely followed by work for five hours a week (Ewing and Thomas, 2010, p. 7). Australians were using the Internet to send and receive emails, shop online, and seeking breaking news online (58%) (Ewing and Thomas, 2010, p. 20). The WIP study also ascertained that 44% of Australians felt that having Internet access greatly increased their contact with family (Ewing and Thomas, 2010, p. 13). The attitudinal statements (Question 17) posed in this study complemented the WIP study.

5.4.1.1 "I would describe myself as a person who spends a lot of personal time online (some would say 24/7) creating content, (writing or uploading images such as photos) for my own blog or website. I also spend time sending/reading emails and/or instant messages."

Over a quarter (27.5%) of middle adult respondents agreed with this statement indicating that they were strong users of the Internet, were broadband users, and were likely to produce content (Lenhardt, Horrigan, and Fallows, 2004). The larger group of middle adults disagreed (72.5%) with this statement, indicating that they were less interested in producing their own content for Internet production and communicating online. For the female middle adults, content production may have been difficult as it would required a more sophisticated set of computing and software skills than they may have possessed. For the 50% of middle adults who had children, a lack of time as well as lack of skills may have played a role.

5.4.1.2 "I think the Internet is great. I don't upload much but I like to download videos and music."

The middle adults were divided about this statement, with slightly more disagreeing (50%) than agreeing (39.4%). This result is consistent with the WIP report where in 2007 50% of their respondents replied that they never downloaded or listened to

music online (Ewing and Thomas, 2010, p. 27). This figure increased in the WIP report in relation to visual entertainment such as movies, TV shows, and video clips where 70% of respondents replied that they never downloaded or watched clips online (Ewing and Thomas, 2010, p. 27).

5.4.1.3 "The only time I spend online is at work doing work things. Sure I spend a little time finding out information for things at home, and checking my personal email account, but most of the time it's for work use only."

This statement was included in the questionnaire to ascertain how many of the middle adults were interested in the Internet as a personal communication tool versus a work tool. The results revealed that 31.6% of middle adults spent time online at work accessing the Internet primarily as a work tool.

5.4.1.4 "Once I would have rung people to let them know I'm thinking of them, now I send an SMS or an email."

This statement was designed to understand how deeply people had domesticated communication technologies beyond voice. Like the middle adults in this study, very few AIMIA respondents use their mobile phone for email or MMS (Mackay and Weidlich, 2008, p. 37, 43). The majority of middle adults agreed with this statement (71.8%). Only a third disagreed and preferred to use voice for such intimate contact (28.2%). Clearly the middle adults had embedded SMS and email into their communication practice. The findings from this study are consistent with Ben-Harush's study into friendworks among women in a sea-change community in New South Wales which found that face-to-face, Internet, landline telephone and mobile phone were the preferred communication methods (2010, p. 11).

5.4.2. The mobile phone

In 2007 the adoption of the mobile phone by Australians was slow. Only 25% of AIMIA's respondents in 2008 indicated that they had a 3G phone (Mackay and Weidlich, 2008, p. 29). The majority of respondents indicated that they use their phones primarily for voice and SMS communication (Mackay and Weidlich, 2008, p. 37, 43).

Of the 18 respondents who answered Question 41, “Which option best describes the mobile phone you use?”, 61% were more likely to have a cameraphone than a basic phone (22.2%) or smartphone (16.6%). It is also possible that middle respondents did not understand what a smartphone was. In the AIMIA 2008 *Mobile Phone Lifestyle Index* respondents were asked if they had a 3G phone and 20% replied ‘I don’t know’ (Mackay and Weidlich, 2008, p. 29). Mackay and Weidlich suggest that this reflected the low levels of digital media literacy of the mobile phone owners as well as the telecommunication providers neglect in providing appropriate education to their consumers (2008, p. 29).

5.4.2.1 “I use my mobile to coordinate my day. I send/receive msgs confirming times, dates, and venues.”

This statement was included in this questionnaire to see how many of the respondents used the mobile phone as a tool to assist in their day-to-day coordination. Twelve and a half per cent of middle adults agreed that for them the mobile phone was used to assist in the coordination of their day, whereas 85% disagreed with the statement. Some studies of mobile phone have shown that people view their mobile phone as a tool for coordinating their day, arranging appointments, coordinating when family arrive home, evening meals, and school pickups (Ling, 2004; Ling and Haddon, 2003; Okabe, 2004; Wajcman et al., 2008a). In the Australian research conducted by Wajcman et al. families placed the greatest importance on coordinating the timing of the arrival home (79%) and arranging to meet with other family members (80%) (2008a, p. 37). It is hard to understand why a large group of middle adults did not agree with this statement. It could be possible that it was too early in the adoption process for them to rely on the mobile phone for micro-coordination. There may be various reasons why this is the case. It could also be that their partners and/ or children did not have a mobile phone. As discussed in Chapter 3, if there is insufficient other users to connect with, then there is less reason to use that particular device.

5.4.2.2 “I only use my mobile for work.”

Here the intention was to reveal whether respondents saw their phone purely for work, or as a social and recreational tool as well. Only a small proportion of the middle adults viewed their mobile phone primarily as a work tool (12.5%), whereas the great majority of middle adults were strong users of the mobile phone in their personal lives as well (85%). In extant studies of the mobile phone people indicate that they viewed the mobile phone as a work tool (Wajcman et al., 2008; Wajcman et al., 2009), and some people kept a separate one for such a purpose (de Gournay, 2002). AIMIA reports in 2008 that 34% of their respondents had a second mobile phone, but unfortunately there was no reason given for its use (Mackay and Weidlich, 2008, p. 20). Coincidentally the majority of owners of second mobile phone were women (62%) who were between 22 – 40 years of age; 50% of these owners were married or living with someone (Mackay and Weidlich, 2008, p. 21). It is possible that these women used the second phone for either work or home use as a way of keeping their work and home lives separate. De Gournay (2002) discovered that French women kept a second mobile phone as a way of differentiating between lovers.

The perception of the mobile phone as a work tool is perhaps most acute among smartphone users as the 3G Internet connection enables the sending and receiving of emails, the use of social networking apps as well as telephone calls, calendar functions and other work-related functions (Rickard, 2011).

5.4.2.3 “My mobile is for personal use only”

The majority of middle adults viewed their use as mixed purpose (60.5%). The finding that 36.8% of middle adults used their mobile phones for personal use only is consistent with the AIMIA finding of 30% among their respondents (Mackay and Weidlich, 2008, p. 28).

The original intent in posing the attitudinal questions 5.4.2.2 and 5.4.2.3 regarding the use of mobile phones was to understand how many respondents symbolically separated work and home life through their mobile phone. A secondary purpose was

to provide a flexible response for those who did not work and for older adults who only had a mobile phone for reassurance purposes for their partners or children. For some people mobile phone ownership provides them with a sense of personal security (Ling, 2007; Rakow and Navarro, 1993; Wajcman et al., 2008, p. 39) or reassurance for their partners (Fischer, 1988; Rakow and Navarro, 1993). What has emerged from the research findings is a strong response by middle adults for the mobile phone being a mixed-purpose device used for both work and personal use. This response is consistent with extant studies about work-life balance where in their roles as working adults middle adults are using mobile phones to help them balance their work commitments with their roles as parents (Palen and Hughes, 2007; Wajcman et al., 2008a). In Wajcman et al.'s (2008b) study *The Impact of the Mobile Phone on Work/Life Balance* conducted at approximately the same time as this study half of their respondents indicated that the mobile phone helped them to balance their family and working lives (p. 37).

5.4.2.4 "While I have a large number of numbers stored in my mobile phone, I only keep in regular contact with say three to five people. They are all close friends or family."

Previous studies have established that the number of telephone numbers stored in a phone, or email contacts in an address book, is not indicative of the type of social connection they hold with the owner of the phone or Internet account (Boase, Horrigan, Wellman, Rainie, 2006; Gergen, 2002; Kavanaugh et al., 2006). Often a large database of numbers or email addresses is held and yet people usually only stay in frequent contact and maintain relationships with close ties who are often family and friends (Boase, Horrigan, Wellman, Rainie, 2006). The assigning of a label to the type of friendship, such as friend versus acquaintance indicates the level of closeness or intimacy experienced with that person (Kavanaugh et al., 2006, p. 219). Gergen (2002) expresses this differently by defining friendships that are close and reciprocal and which have depth and meaning can be seen as 'vertical' and those with whom little depth or interaction occurs as 'horizontal'. For the middle adult respondents in this study over half the group (60.5%) agreed with the statement that they only kept in contact with a few people while just over one-third (36.8%)

disagreed. In terms of social relationships this indicated that while respondents may be acquainted with a large number of people, the middle adult only felt strong ties with three to five people. This tallies with the findings of Boase, Horrigan, Wellman, and Rainie (2006).

5.4.2.5 “I have personalised my phone”

The personalisation of a phone through the use of ringtones (Skog, 2002), dangles, and background images indicates a level of personal identification with the device which is most prevalent among youth and especially youth of Asian decent (Hjorth and Kim, 2005; Katz and Sugiyama, 2005). However, there is evidence of personalisation increasing among older adults as they become more comfortable with the device. In 2007 few adults decorated their phones externally but in 2011 anecdotal evidence supported by the adoption trajectory suggests that as more adults adopt mobile phones, more of them feel comfortable expressing their identity through the phone by choosing decorative covers, background images and ringtones as more adults adopt mobile phones. Adults can be seen in television commercials, TV shows and print advertisements with externally decorated phones.

Identification with the mobile phone is an important part of the domestication process. In line with Sadie Plant (2001, p. 23) De Souza e Silva states that in almost all parts of the world the name assigned to a mobile phone is connected with mobility, hands and portability. In Australia the terms *mobile* or *mobile phone* or even the very personal, intimate and possessive version *my phone* is used. De Souza e Silva (2006) contends that even the naming shift from the American term *cellular phone* to *mobile* or *handy* shows a transformation from a technological tool to a personal device, to a part of the self and one’s identity (p. 113). The majority of middle respondents clearly identify with their phone because they have personalised it to some degree (76.3%). Only a small group of middle adult disagreed (21.1%).

5.4.2.6 “My mobile is for emergency use only”

It is common for new mobile phone users to access their mobile phones in emergencies only. Users can be slow to adjust to new technologies after purchase and may need time to domesticate their mobile phone. It is usually only older adults who show a slower adoption trajectory (Ling, 2006; Wong, 2006). Only a small number of middle adults agreed that they used their mobile phones for emergency use only (13.2%), indicating that most middle adults were very comfortable with their mobile phones (78.9%). This is not surprising given the previous statement in 5.4.2.5 strongly indicates an identity with the object.

5.4.2.7 “I only use my mobile to talk to people. I don’t send SMSs or MMSs”

This was another statement designed to highlight the level of comfort respondents felt with their mobile phones beyond voice carriage. A few respondents were still reluctant to use their mobile phone for SMSs or MMSs (5.1%) compared with the majority who obviously felt comfortable with sending SMSs and MMSs (92.3%).

5.4.2.8 “I don’t like mobile phones. I only have one because my family likes to be able to ring and check I’m okay”

This statement was posed in the questionnaire to identify whether some respondents still feel uncomfortable with mobile phone use. It was expected that older adults would form the majority of the respondents. The results revealed that while a few middle adults agreed with the statement (15.4%), while the majority disagreed (84.6%).

5.4.3. Family photographs

Photography is an additional way of connecting with family and has been part of the fabric of everyday life for families since photography was commercialised.

Photography plays an important role in familial celebrations such as weddings and birthdays as photographs act as memory prompts (Riviere, 2005, p. 175). Like the Kodak Brownie camera from the 1950s and 1960s, the mobile phone has removed barriers of entry to everyday photography and increased the possibilities for everyone to shoot photographs, including women and children (Olivier, 2007;

Rickard, 2006). In 2003 Rose conducted a study into the use of digital photography within families and found that display, distribution and storage of photographs were important to families in both analog and digital environments (Rose, 2003; 2004). The online questionnaire used in this study investigated the role photography might play for families in a digitally connected space by exploring whether they shot photographs using their mobile phones, where they displayed family photographs and whether they used the photo gallery space as a place for display during face-to-face visits.

In response to Question 45, “Do you take photos or videos of your family on your mobile phone?”, the results indicated that 66.6% of the middle adult respondents took photos and videos of their families using their mobile phone. About a quarter of all middle adults did not shoot either photos or video (22.2%), and a smaller group again (11.1%), shot only photographs. It is a significant shift that people are shooting both photos and videos using their mobile phones. As stated by Olivier the mass adoption of a small, commercialised and easy-to-use camera has given those without professional access or access to the family still or video camera the opportunity of recording their own images expanding the range of types of images taken and then distributed (Hjorth, 2007; Okabe, 2004; Oliver, 2007; Scifo, 2005).

5.4.3.1 “It is important to me to display a family photo...”

The locations provided as possible responses to this statement were: at work, at home, as a background image on my computer screen, as a screensaver on my computer, and as a background image on my mobile. The majority of middle adults agreed about the display of a family photograph in both locations (work and home), whereas middle adults were less willing to commit to displaying a family photograph as a background image, as a screensaver, or on their mobile phone background. The majority of middle adults chose the neutral position, of neither agree nor disagree for the importance of electronic display.

5.4.3.2 “It is important to me to keep photos of family in my mobile phone gallery to show to friends and family.”

The responses to this attitudinal statement were mixed. The highest response rate was to the neutral position of 'neither agree nor disagree' (37.8%), followed by 'agree' (24.3%). The negative responses included 18.9 % of middle adults stating that they disagreed, and 8.1% that they strongly disagreed. Thus while the use of mobile phones for taking photographs could be high, it is not always so important for middle adults to keep family photographs for display in their phone indicating that these photos are regarded as ephemeral.

5.5. Which communication technology do middle adults use for familial connection? Mobile Phones or Internet?

Question 31 of the online questionnaire asked, "Which do you use the most to keep in contact with your family? Mobile phone or Internet? The options for respondents were; mobile phone, the Internet, or neither.

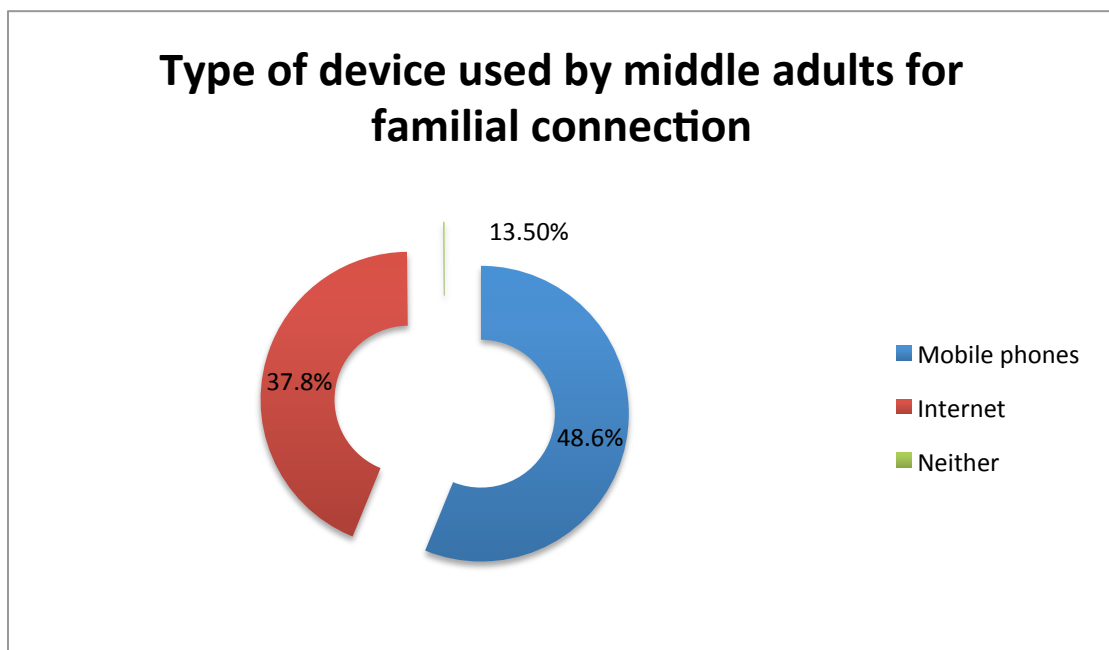


Figure 5.3: Type of device used by middle adults for familial connection.

While the uptake and use of the landline phone at home was still high among the middle adults (85.7%), as a group they were more likely to keep in touch with family members using their mobile phone (48.6%), or the Internet (37.8%). Of those who

did not use either, they were most likely to keep connected using the landline phone (13.5%).

Exploring the use of the device more closely, the results show that using the voice element of the mobile phone when contacting family was equally as popular as SMS at 25%. Of the respondents who chose the Internet as their main form of communication with family, only 14.3% chose to communicate with family using instant messaging. The majority (42.8%) chose not to use it.

5.6. Keeping in contact with family nearby and far away

As a way of understanding if there were any differentiating factors according to distance, Questions 7, 8, 9 and 11 asked where other family members lived in terms of distance from respondents, and which technologies they preferred to use to keep in communication. As set out in the previous chapter part of the rationale behind this question was to investigate whether families use different communication tools if there was a greater distance involved such as a family member residing interstate or overseas.

5.6.1. Family nearby

For the majority of respondents their family lived relatively close - either in the same city or the same state. Significantly fewer responded that their family was dispersed among the different states (7.5%). The highest response rate was for those with family members living in the same state, or with family members living in another state to themselves (26.9%).

As shown in Figure 4, of the middle respondents who lived nearby to family members, where 'nearby' refers to someone within 40 minutes drive of their home, 76.2% had used short message service (SMS) within the last six months, 74.6% had had spoken using the mobile phone, 64.3% had visited in person to stay in contact with family members.

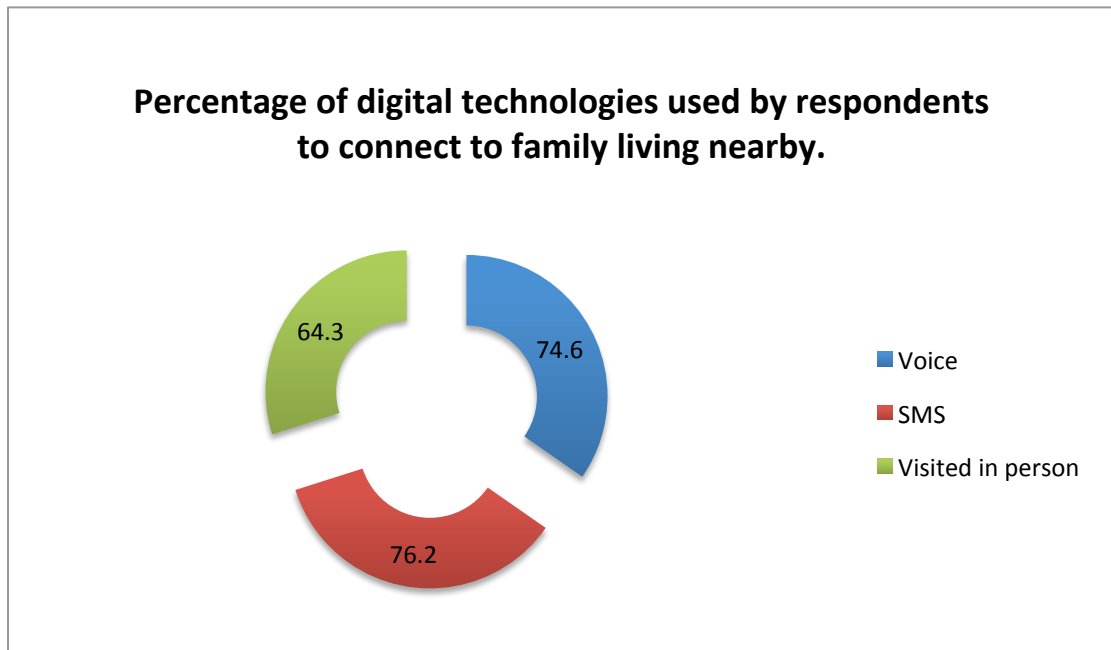


Figure 5.4: Percentage of digital technologies used by respondents to connect to family living nearby.

5.6.2. Family far away

The results indicate that there *is* a difference when communicating with family members who live further away; middle adults use different technologies to communicate depending on the location of the other family member.

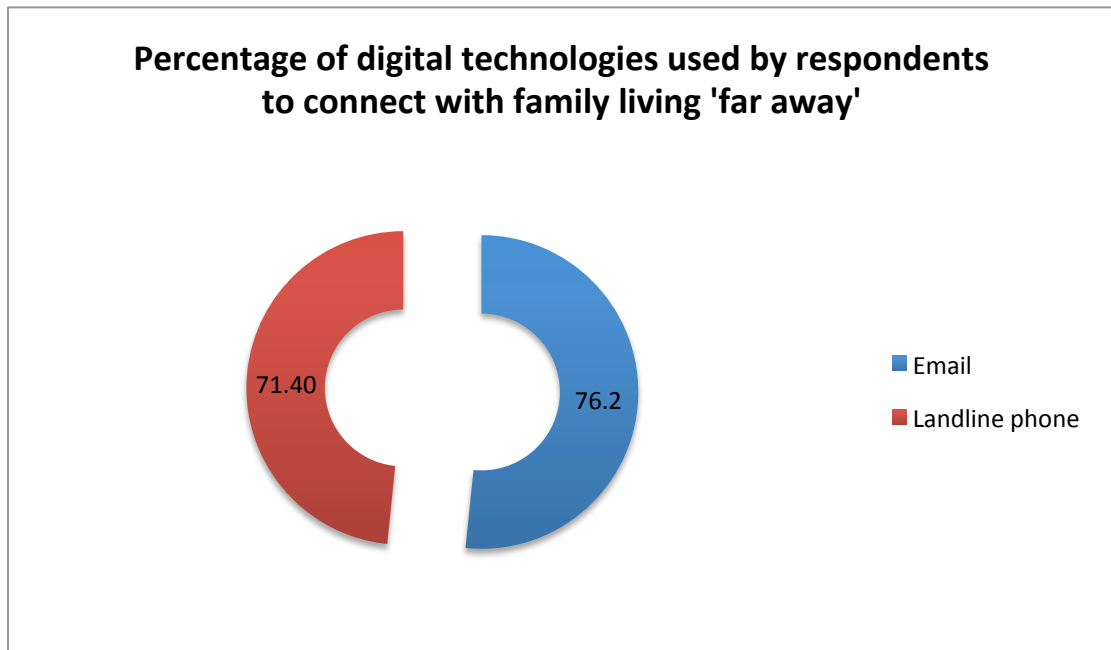


Figure 5.5: Percentage of digital technologies used by respondents to connect with family living 'far away'

As shown in Figure 5, for middle adult respondents with family members who lived further away, the most popular methods of contacting family were email (76.2%) and speaking using a landline phone (71.4%).

5.6.3. Family overseas

A substantial minority of middle adult respondents had family living overseas (42.8%). When asked which countries they resided in, respondents indicated that they had family members living in China, Germany, Greece, Hong Kong, India, Italy, Japan, Malaysia, Netherlands, New Zealand, Singapore, Thailand, United Kingdom, Former Yugoslavia, and 'Other'.

In terms of family members living overseas the results showed that middle adult respondents had a father living overseas (44.4%), uncle (44.4%), brother (38.8%), aunt (38.8%), mother (33.3%), sister (33.3%), nephew (22.2%), niece, (27.7%), grandfather (16.6%), grandmother (16.6%), son (11.1%), grandson (5.5%), daughter (5.5%), and granddaughter (5.5%). These results clearly indicate the breadth of extended family living overseas, and this diversity of age and relationship may

increase the breadth of technologies used to keep in touch as there are representatives from each familial generation.

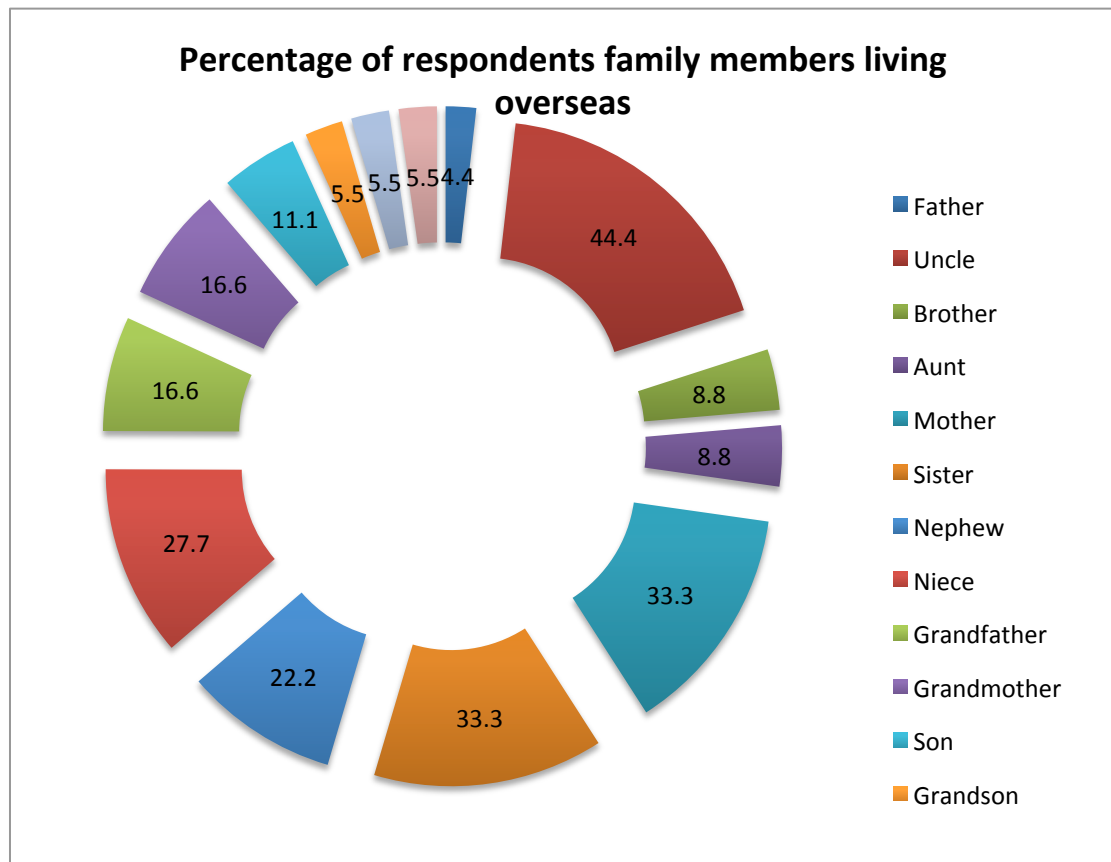


Figure 5.6: Percentage of respondents family members living overseas

For family members who live overseas, the primary means of communication were email and landline phones. There were a few results for VoIP, mobile SMS and using social websites. This is the same result as for family members who live far away. So while there was a difference between the technologies used by families to communicate with each other when they lived near by, there was a distinct difference for those who lived further away or overseas. This may indicate that at that point in time in 2007 there was not enough knowledge among users about cost effective communication technologies - such as VoIP - for them to have been adopted and domesticated within the home at that point in time. Thus the few responses in relation to VoIP and social websites may have been indicators of adoption by early adopters. ACMA research since then indicates that Australian adoption of VoIP services has increased as consumers gain awareness of the technology and the cost effectiveness it has when holding long-distance,

international and video calls (2010c, p. 13). There is a similar case for social networking websites such as Facebook (ACMA, 2010a, p. 25).

5.6.3.1. Middle adults as parents as a determining factor in digital communication technology use with family living overseas

Beyond the middle adults' immediate family members is the extended family network - comprising nieces, nephews, and grandparents some of whom may live overseas as indicated in Figure 6. Great geographical distance such as living overseas rather than in the next state may be a contributing factor in the use of particular digital technologies such as email or VoIP web based services for example Skype. In Kaare et al.'s study of Norwegian preteens, the children used email to communicate with grandparents (2007, p. 619). Other research indicates that the use of ICTs within the home is higher when there are young people living at home (McLaren and Zappala, 2002), so it could be suggested that the use of digital technologies may be more prevalent in families with children as a way of keeping connected with extended family members.

To test this hypothesis in terms of this study, the middle adults in this study were divided into eight groups. In the first division, children were the dividing factor. According to the results of Question 3, "Do you have any children?", 21 of the middle adults indicated they had children, and 20 indicated they did not. Furthermore, the results indicated that the middle adults without children were more likely to have family living overseas (10) than middle adults with children (8).

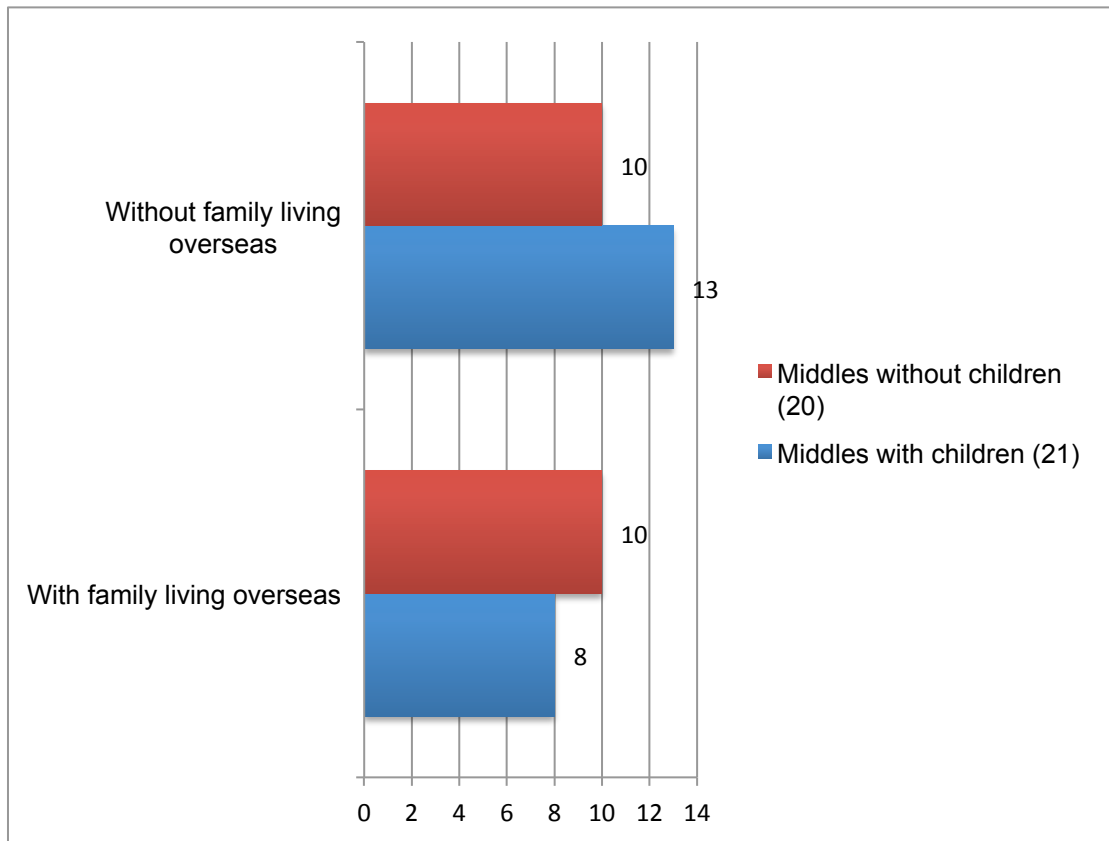


Figure 5.7: Family Living Overseas by middle adults as parents or not

The responses indicate that specific forms of communication were used by the individual groups. However, with such a small response rate it was impossible to make definite projections. Still, there was a small difference in that ‘middle adults without children’ were the only users of VoIP, and ‘middle adults with children’ were in the majority of cases the only users of SMS. ‘Middle adults with children’ used SMS with younger familial generations such as their daughters, nieces, and nephews. When ‘middle adults without children’ used SMS it was to communicate with a potentially older familial generation such as an aunt or uncle.

The finding that middle adults without children were the greater users of VoIP contradicts many studies conducted in relation to Skype and video calling services. Although HCI studies have investigated video calling as a way of building and establishing relationships between grandparents and grandchildren (Raffle et al., 2010, 2011) only a few - such as Judge, Neustaedter and Kurtz 2010 - have examined

the use of Skype by extended family members in their homes. There are also anecdotal reports of how grandparents and grandchildren are connecting using Skype (Baker, 2011). The uptake of video calling and VoIP services - particularly web based services such as Skype - within the Australian community since this data was collected suggest that these may be preliminary results only. The use of Skype and VoIP services is discussed in depth in Chapter 8.

5.7. Which family members do they keep in contact with the most, and how?

In exploring how families communicate, Question 18 asked, “In the last six months, which family member have you kept in touch with the most?”. The single family member that respondents were most likely to keep in touch with was their mother (48.8%). Details included in Figure 8.

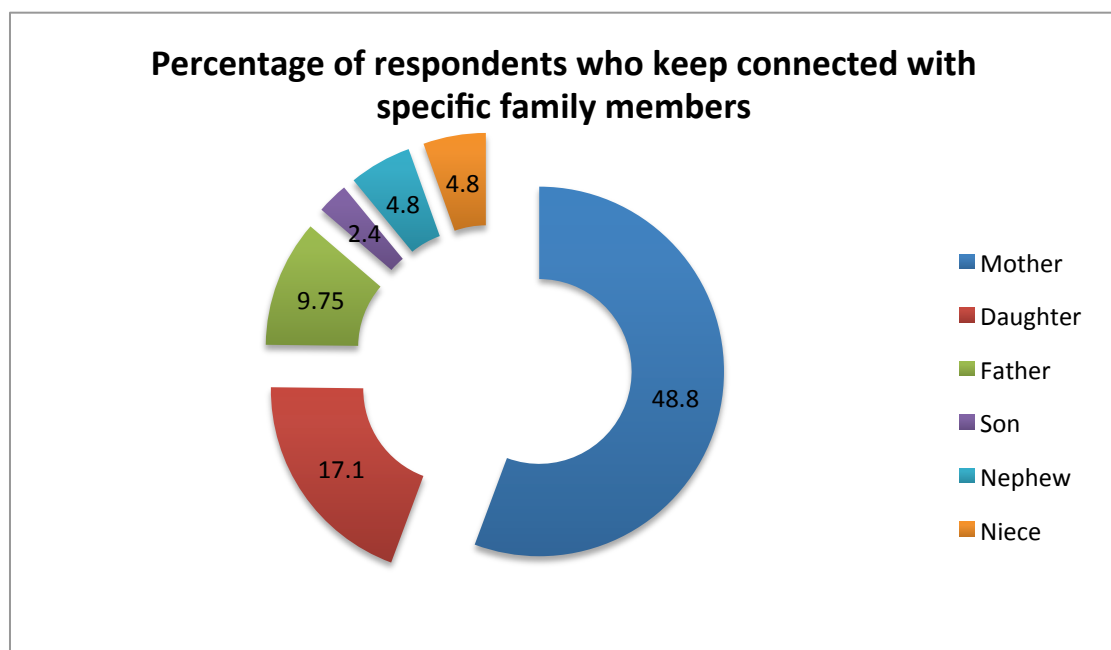


Figure 5.8: Percentage of respondents who keep connected with specific family members

Respondents were most likely to keep in touch with their mother (48.8%). The next most likely family member was their daughter (17.1%), father (9.75%), son (2.4%), nephew (4.8%), niece (4.8%), aunt (4.8%), and grandmother (2.4%). No one replied that they keep in contact with their grandfather, uncle, grandson, or granddaughter in this way. 4.8% of respondents replied that they did not keep in touch with these family members in this way.

This result is especially significant as women are the gender most likely to use a telephone for social purposes (Wajcman et al., 2008), such as keeping in touch with children (Lohan, 2001), while men dislike using the telephone to communicate for social relations (Rakow and Navarro, 1993; Lohan, 2001; Wajcman et al., 2008). The finding that the mother is the main contact is consistent with other studies such as those conducted by Lohan (2001), Rakow and Navarro (1993), Sawhney and Gomez (2000), and Wajcman et al. (2008).

5.7.1. What is your main method in keeping in contact with this person?

Question 19 of the online questionnaire clarified the main method of keeping in contact with the family member respondents kept in touch with the most. Voice services such as the landline phone, mobile phone and VoIP were the preferred method to keep in contact with family. Most importantly, this result also most importantly indicates that even though there are currently a much wider number of technologies available involving text and images such as photographs, voice is still the preferred method of communication.

Respondents used six preferred methods to keep in touch with their family member. Of the respondents, 46.2% used a landline phone (not VoIP), 20.5% used voice on a mobile phone, 12.8% used email, 12.8% used SMS on a mobile phone, 5.1% used VoIP (e.g. Skype), and 2.6% used instant messaging.

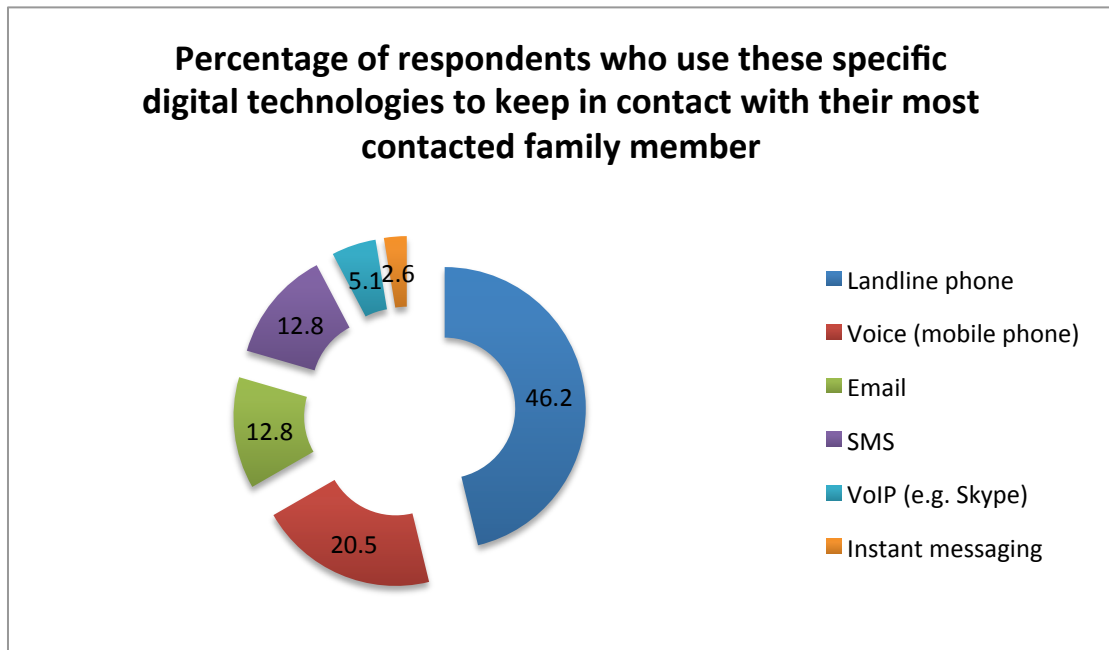


Figure 5.9: Percentage of respondents who use these specific digital technologies to keep in contact with their most contacted family member

While middle adults selected six different methods to communicate, half selected ‘voice’, and the other half selected text. The voice selections comprised 71.8% of middle adult preferences, illustrating that using the phone - whether it is a landline, mobile or VoIP - is still the preferred method of communication for these respondents.

5.8. How do you keep in touch with specific family members?

Understanding how middle adults communicate with their extended family is important to this study in order to understand how families are communicating using digital technology. While ACMA and other organisations publish research about uptake numbers, there is little research, if any, to indicate which technologies are being used by members with different roles within a family. So in the online questionnaire respondents were asked to nominate which technologies they used to communicate with their family, by individual family position.

The diversity of communication technologies used by the middle adults to communicate with their extended families ranged from five methods with the

younger familial generations (son, daughter, niece, and nephew) and contemporary generations (sister, brother, and aunt), to one or two methods with older generations (grandmother and grandfather). Grandchildren of the middle adults are the anomaly. It is possible that the grandchildren of the middle adults were very young, and any communication between them took place when the grandparent phoned the family home. Figures 10 to 12 present these results in detail.

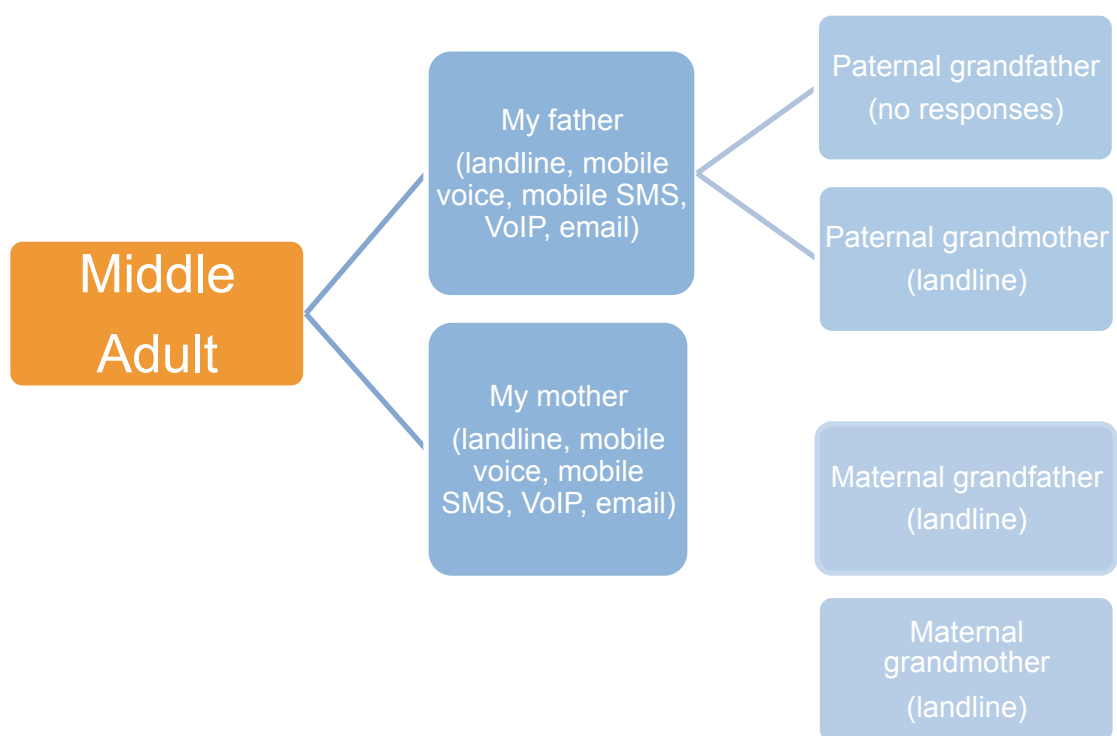


Figure 5.10: Middle adults and the older familial generations

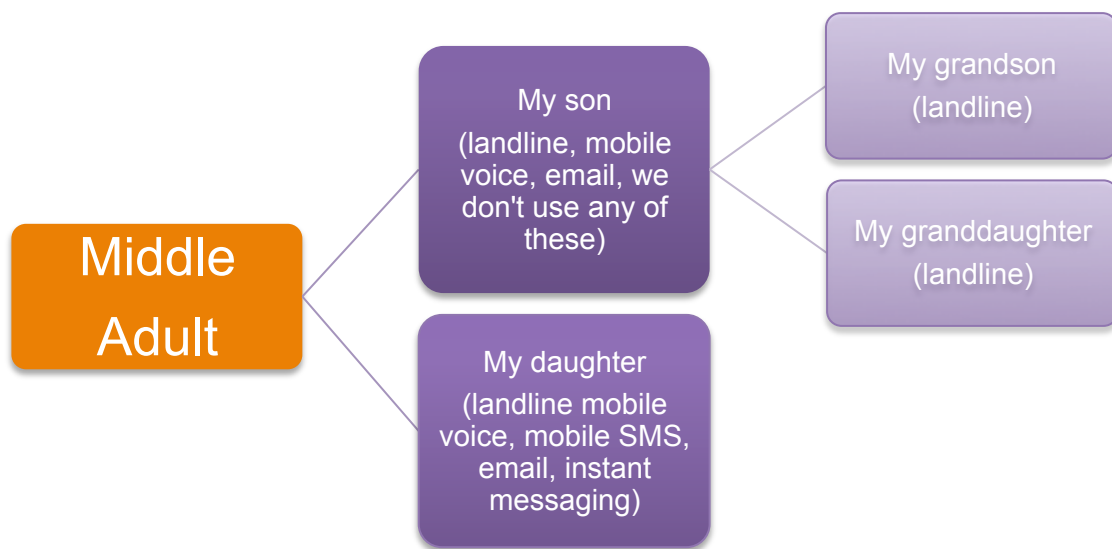


Figure 5.11: Middle adults and the younger familial generations

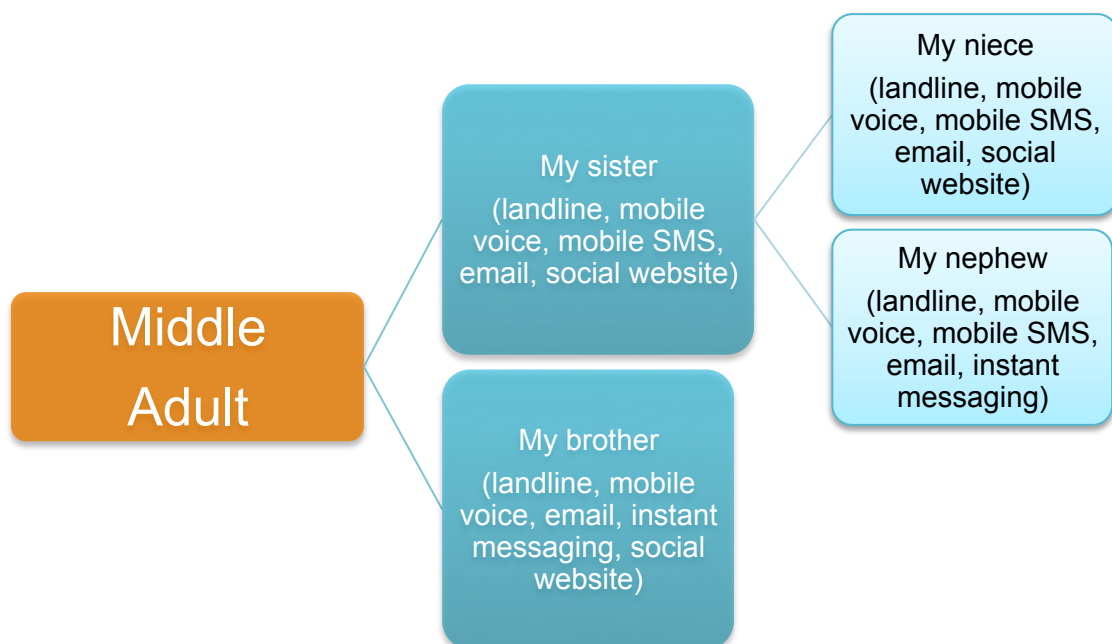


Figure 5.12: Middle adults and their contemporary familial generation

These findings have a predictable outcome in relation to current expectations of the technologies used by younger familial generations. Younger people use a greater diversity of communication technology - such as mobile phones, email, instant messaging and social websites - to keep connected with family. Also predictably, older generations use a narrow range of technologies - possibly only one, most commonly a landline phone.

Uniquely, these findings show that extended family members communicate using multiple methods. Previous studies have indicated the presence of a family mediator - someone who is the sole contact for communicating with extended family members - and often this person is a woman (Sawhney and Gomez, 2000). In Kaare et al.'s study of Norwegian preteens children of immigrant families who participated in the study reported that their family had a single email address (2007, p. 619). The findings in this study indicate that direct person-to-person communication is occurring as is the use of multiple methods with extended family members such as nieces and nephews.

It is interesting to note that some technologies were used more consistently than others: landline phone, mobile phone (voice), email, and mobile phone (SMS). Instant messaging, VoIP, and social websites were used less frequently and appeared as part of a group of five rather than as single-use. As is to be expected because of its longevity, the landline phone was the most common single use technology; as it was used by the middle adults to communicate with all the familial generations.

While there appeared to be a large diversity of communication technologies used by the middle adults, there were in fact only seven selected by the middle adults from the 14 possible questionnaire responses. Respondents were able to select from mobile phone (voice), mobile phone (SMS), mobile phone (MMS), VoIP, Webcam, email, instant messaging, blog, discussion board, family website, online photo album, online video gallery, personal website, and social website – for example, Facebook.

The only mobile phone option not selected was 'mobile phone MMS'. This may reflect the time period in which the data was collected, December 2007, and the restricted and costly telecommunications plans at that point in time, particularly in relation to the sending of images. Since then the adoption of smartphones and cheaper telecommunication plans has possibly changed this practice. The ACMA Communications report for 2010-2011 states that in this time period, the volume of SMS and MMS sent in Australia increased by 23% to reach 36.3 billion (2011, p. 17).

5.9. Keeping in touch as a group

Another unique aspect to this study was asking how family members kept in touch as a group (Question 21). The Internet, in particular, provides opportunities to communicate together synchronously using VoIP and chat messaging, or asynchronously using online photo albums/galleries, family websites, family blogs, and video galleries. As the online questionnaire data was collected in 2007, very few of the respondents (7.2%) used a social networking site that would have enabled greater opportunities for asynchronous sharing of content such as text posts, photos, and videos. The overwhelming response was 'face-to-face visits' and SMSs as the preferred method for keeping in touch as a group.

As shown in Figure 5.13, most respondents used 'face-to-face visits' (53.6%) for keeping in touch with family as a group. The same number, 53.6% also used SMSs on a mobile phone; 46.3% used voice calls on a mobile phone; 7.3% used MMS on a mobile phone; 9.7% used VoIP chats, 9.7% used family instant message chats, 4.8% used family online photo album/galleries, 4.8% used family websites, and three-way voice chat, family blogs and video galleries were each only used by 2.4% of respondents. Of the middle adult respondents, 12.4% said that they had no contact with the family as a group¹.

It is also possible that there is a difference between what people would prefer to do and what they actually do. In 2007 the middle adults may have used social networking sites but not with family as not all family members may have had access to a site. In 2010 adoption levels were higher, with 62% of Internet users accessing social networking sites. Australian women are also more likely than Australian men to be using social networking sites and are much more likely to be frequent users of these sites (Mackay 2011, p. 10).

¹ The answers to this question total more than 100% as it allowed multiple responses.

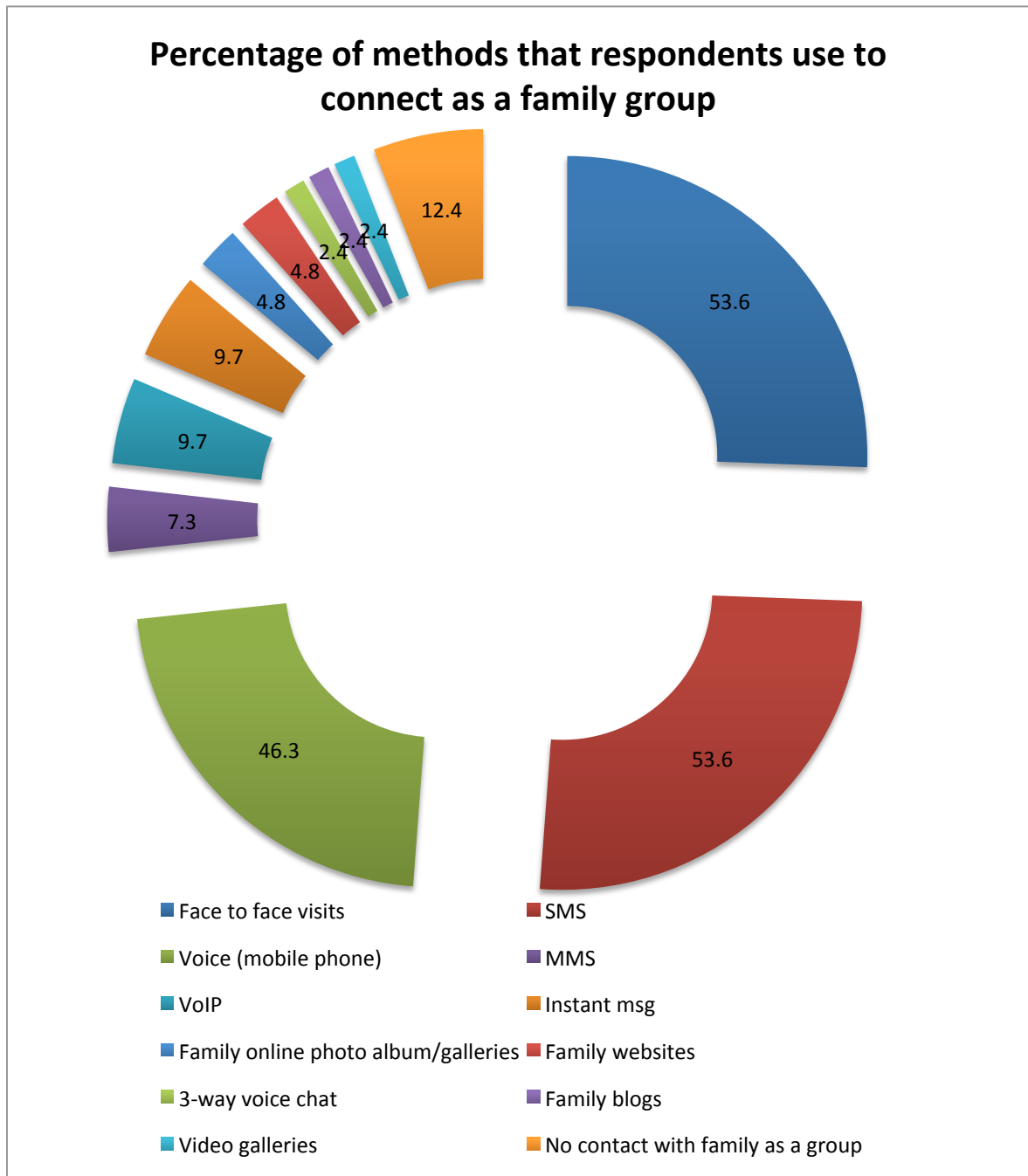


Figure 5.13: Percentage of methods that respondents use to connect as a family group

The frequency of Internet use since 2005 has increased across all age groups in Australia, with the highest proportional increase occurring in what ACMA calls the 'heavy Internet category' - that is users who connect for more than 15 hours per week (ACMA, 2010, p. 13). According to ACMA, the proportion of Australian heavy Internet users has increased 100 per cent in the five years between 2005 and 2010

(2010, p. 13). Also, the greater adoption of wireless communication in the last few years has facilitating social networking synchronicity, and in the majority of cases older Australians in 2007 would have been less likely to actively participate in online communication (ACMA, 2010). By 2010, adults aged 55-64 had increased their Internet use in the heavy Internet category by 138% (ACMA, 2010, p. 13).

5.10. Communicating in languages other than English

Australia is a nation built on immigration. There are large diasporic communities in Australia who have settled from parts of Europe (such as Greece and Italy), from Asia (such as China, Vietnam and India), and recently from Africa. The purpose of this study is to provide a snapshot of how Australian families are communicating using digital technologies and it is important to acknowledge that communication practice occurs in languages other than English particularly between family members. As an attempt to capture some of this communication practice and to perhaps build a greater understanding of this practice within our community, questions were included in the online questionnaire about whether family members communicated in languages other than English.

There were two strands in this section of the questionnaire. Respondents were asked questions regarding their use of a second language in their communication with family members. Questions 39 and 42 were asked about their use of language in relation to written communication (email), and spoken (mobile phone). This is unique to this study. As discussed in Chapters 2 and 3, no other study includes family language practice as part of its investigation. Language differences and lack of access and skill with digital technologies is noted by government agencies within other contexts such as digital media illiteracy, and these issues are discussed in the next chapter.

Nevertheless, it is important to acknowledge the multilingual communication practice occurring daily on our streets or within our homes and how that may impact on digital communication practice between families or in the wider community.

This diversity is reflected in the results. As stated in 5.6.3, 42.8% of respondents indicated a remarkably broad family background. Respondents had family living in the following countries: China, Germany, Greece, Hong Kong, India, Italy, Japan, Malaysia, Netherlands, New Zealand, Singapore, Thailand, United Kingdom, and Former Yugoslavia.

5.10.1. Instant Messaging

In Question 44, respondents were asked if they used different languages when using instant messaging. Only a few respondents answered this question, indicating they either did not communicate with family in this way or that English was used.

5.10.2. Email

While respondents did use email to communicate with family, the only language other than English used and noted by a respondent was German.

5.10.3. Voice

None of the respondents reported speaking another language other than English on the telephone with their family.

5.10.4. SMS

None of the respondents reported using a language other than English for sending SMSs, unless it was textspeak itself.

Texting language was used among siblings, with their children, nieces, nephews, aunt and in one case their mother. In all cases the response rate was low, but the responses did indicate that this is another method used by family members to communicate with each other.

5.11. Conclusion

This chapter has examined how middle adult respondents communicated with their families using digital technology. The results indicate that these middle adults were typically female, living as a couple with their partner, with or without children, and

working outside the home. The technology most used by the middle adults in their everyday lives was a mobile phone (92.8%).

The chapter reported the results of the online questionnaire in context within the broader Australian communications environment including the type of internet connection used, respondents' attitudinal responses to their use of the Internet along with their use of the Internet and mobile phone. Unsurprisingly the middle adult results were consistent with other contemporaneous studies around 2007. Also unsurprisingly the middle adults chose either face-to-face visits or voice as a preferred method of communication with family members.

This chapter detailed the results from the first form of data collection, the online questionnaire. The following chapters will detail the results from the second form of data collection, the in-depth, face-to-face interviews held with 11 individual family members. The first of these chapters, Chapter 6, explores the Internet and mobile phone adoption and practices of the interviewees using brief profiles of each interviewee. In each profile a particular aspect of the interviewee's personal approach will be highlighted to demonstrate the diversity of adoption, practice and skill level among individual family members.

CHAPTER 6: The Interviewees: Their Adoption and Practice of the Internet and Mobile Phone

“I wonder what young people now, going to school, say primary school now, because they’ve got their laptops ... How much more advanced are they going to be than your generation, and John’s generation? Are you going to feel like I feel in 30 years time?” (Vera)

6.0. Introduction

The previous chapter presented the first set of results for this study from the questionnaire and developed a profile of the middle adult respondents. The profile was constructed from the responses of participants to a series of questions that explored how they communicated with their family members using digital technologies.

In addition to the online questionnaire, the data collection also included face-to-face interviews with 11 individual family members from eight families. This chapter explores the results of those interviews. The interviews were in-depth and unstructured with a focus on understanding how the two adult generations of family – middle and older adult – communicate with each other using digital communication technologies. The interviews were held in order to gain further insight into how the families are communicating during a constantly evolving technological revolution.

This chapter is framed to highlight the diversity that occurs in adoption and practice among the individuals interviewed. While diversity in itself is not always valuable to investigate, it is important to recognise that people do adopt and use technology differently and sometimes this is key to understanding their socio-cultural practices as a family and as part of the wider community. It is also what makes them members of ‘recognisable families’ (Hirsch, 1994).

6.1. The interview results

As discussed in Chapter 4, after all the interviews were held the digital audio recordings were professionally transcribed. The analysis of the interview transcripts followed a generic qualitative data analysis process applied to many interview transcripts (Bryman, 2004; Burnard, 1994). The transcripts were read through, patterns within the data identified, and meaning units considered. The next stage was to group together the meaning units, allocate categories, and code the transcript tables. The three topics that generated the most discussion by the interviewees are those explored in this thesis. As detailed in Table 6.1 these are, digital media literacy, mobile phones and Skype. The results chapters of this thesis are organised according to these three topics. This chapter explores the interviewee comments regarding their adoption and practice of the Internet and mobile phones. Chapter 7 explores interviewee reflections and considerations of digital media literacy issues within their families. Chapter 8 explores the interviewees' adoption of and practices associated with the emerging voice technology, Skype.

Topic	Number of interviewees	Issues raised
Digital media literacy	10	Lack of skill, task allocation between generations, middle adult reflections on older adult use of technology, youth and older adults, older adults and middle adults, and the purchase and upgrading of digital devices such as computers and phones
Internet and mobile phones	9	Adoption and practice, cost, using for organisation, and taking photos using a mobile phone
Skype	7	Skype cost, webcams, depth of communication and intimacy, weekly call home and phone rituals, webcam subjects, technical problems, and frequency of calls

Table 6.1: The top three topics coded from the interview transcripts

Table 6.2 contains the details of the interviewees who responded to each of the topics, organised by topic. The first column provides gender details; the second,

generation; the third, their name; and the fourth, family members with whom they use the specific technology to communicate. During the review of the transcripts, it became apparent that each interviewee spoke or referred to a particular family member in relation to each topic. That information is provided in the fourth column. This detail assists in providing insight into the range of family members that the interviewees communicate with. It is clear that the range extends beyond the immediate familial generation of parent, child, and grandchild and extends to siblings, aunts, nieces, and parents-in-law.

Digital Media Literacy*

Gender	Generation	Interviewee	Family members
Male	Older Adult	David	His brother
Female	Older Adult	Linda	Her brother-in-law and herself
Female	Middle Adult	Joanne	Her son, her mother and herself
Female	Middle Adult	Beth	Her mother-in-law and her aunt
Female	Middle Adult	Andrea	Her mother-in-law, her parents, and peers
Female	Older Adult	Vera	About herself and her son John
Male	Middle Adult	George	His parents-in-law, his mother
Male	Middle Adult	John	His mother
Male	Middle Adult	Simon	Himself and peers
Female	Middle Adult	Alice	Herself

* Only seven out of the eight interview families discuss digital media literacy in their interviews

Table 6.2: Details of interviewees who discuss digital media literacy in their interviews

Not all interviewees commented on each of the topics. Generally the reason behind this was because they did not use the technology. However, in one instance, Amanda, who does use a mobile phone, did not mention her usage of the device in relation to her family. Her mobile phone was more likely to be used for work-related purposes. Because digital media literacy and mobile telephony were not raised

during her interview, middle adult Amanda is the missing ‘family’ in the tables 6.2 and 6.3.

Mobile telephony*

Gender	Generation	Interviewee	Family Members
Female	Middle Adult	Joanne	Her son and her step-son
Male	Middle Adult	Simon	His niece
Male	Older Adult	David	Their son and himself
Female	Older Adult	Linda	Their son and herself
Female	Middle Adult	Andrea	Her mother-in-law
Female	Older Adult	Vera	Herself
Female	Middle Adult	Alice	Herself and her mother
Female	Middle Adult	Beth	Her mother-in-law
Male	Middle Adult	John	Himself

* Seven out of the eight interview families discuss the use of mobile telephones

Table 6.3: Details of interviewees who discuss mobile telephony in their interviews

In relation to the adoption of the voice application Skype, not all the interview families used the technology. As David and Linda still used a dial-up connection at home that did not support the fast connectivity required for Skype, and as Joanne’s family did not use it, neither of these families appears Table 6.4.

Skype

Gender	Generation	Interviewee	Family members
Male	Middle Adult	Simon	Niece and father
Male	Middle Adult	John	His sister, brother-in-law, niece
Female	Older Adult	Vera	Her daughter, son-in-law, grand-daughter
Male	Middle Adult	George	His mother and brother
Female	Middle Adult	Andrea	Her parents
Female	Middle	Amanda	Her adult children

	Adult		
Female	Middle	Beth	Her aunt and her daughter
	Adult		

* Six out of the eight Interviewee families discuss Skype in their interviews

Table 6.4: Details of interviewees who discuss Skype in their interviews

6.2. The interviewees

This section will primarily draw on the interviews held with the eight middle adults: Simon, Beth, Alice, Joanne, John, Andrea, Amanda and George along with the three older adults Vera, Linda, and David.

The context for these profiles is the interviewees' adoption of the Internet and mobile phones for familial communication. The adoption of the Internet and mobile phones is now prevalent among all Australians. While it may be considered integral, it cannot as yet be considered ubiquitous even though researchers such as Wajcman, Bittman and Brown suggest this is the case with mobile phones (2009). For some researchers, ubiquity occurs in relation to computing where the phone is viewed 'as a type of computer, which includes Internet connection, personal organizer, ability to send and receive emails and instant messages' (de Souza, 2006, p. 110). In reality, there is still a gap in the way the different familial members use the mobile phone – as will be seen in the interviewees' profiles. It is more accurate to view the mobile phone as a pervasive device rather than a ubiquitous one, as many people are still to understand and use all the functions it possesses. As discussed in Chapter 3, while landline phones are on the decline in Australian homes, the Internet and mobile phones continue to be adopted by Australians (ACMA, 2011; Ewing and Thomas, 2010). This final phase has slowed in pace as mass adoption has occurred, but this is consistent with Roger's theory of innovation (1995). The adoption of the Internet and mobile phones can now be seen as baseline communications practice, as there are other communications tools emerging such as Skype that can be seen as new, innovative and ripe for adoption.

6.2.1. George and Alice

Middle adults George and Alice were interviewed separately and their adoption and practice of technology were quite different. George was comfortable with technology and owned a laptop computer with wireless technology and a mobile phone. Alice had a fixed Internet connection at home and a landline phone, and only during the study purchased a mobile phone. George, as a digitally literate family member, reflected in his interview on his experiences of gifting technology to older adults and a discussion of the findings from his interview follows. Alice's experiences as a new mobile phone user are also discussed, revealing the thoughts of someone who is new to this particular technology and who struggles to simply connect and phone someone.

6.2.1.1. George reflects on 'gifting' digital technologies to older adult parents and parents-in-law

George was very digitally literate. He had a great understanding of technology and showed no fear about encouraging older family members such as his mother or parents-in-law to use technology. He actively encouraged their use by providing them with technological 'gifts' and he also 'gifted' his experience in terms of purchasing and setting up digital technologies.

It is not uncommon within families for various technologies including mobile phones to be gifted rather than purchased (de Lange, 2006; Taylor and Harper, 2002).

Sometimes this occurs around the time of a mobile phone upgrade; at other times the phones are purchased and then gifted. Often gifts such as mobile phones are presented to another family member as a way of reassuring the individual that the person receiving the phone is able to contact them if they need help. In this case, there is an expectation by the gifter that they will be contacted and indeed allow contact from them. Gifting implies reciprocity, and the receiver of the gift is expected to reciprocate (de Lange, 2006; Taylor and Harper, 2002). Most importantly for families, de Lange states that the 'transition to a new stage in life is ritually expressed by gifting of a mobile phone' (2006, p. 2). The example he uses is

that of a parent who gives their child a mobile phone when they think they are old enough for it, as was the case with Joanne's son Alex and stepson Henry. It is a sign of trust from the parent to the child 'as the reciprocal obligation on the child is to take more responsibility e.g. paying one's own bills' (de Lange, 2006).

This study revealed another way of thinking about the process of gifting technology: the gifting of a mobile phone by an adult 'child' to their parent or parent-in-law. Several interviewees gifted technology, and in particular mobile phones, to other family members. Andrea and her husband gifted a mobile phone to her mother-in-law, Alice gifted one to her mother, and David and Linda received various technologies from their middle adult son. The middle adults in this study were increasingly gifting their own parents (older adults) mobile phones in order to feel reassured when their parents were away from home. This can be viewed as a form of forced adoption by the gifter who is asserting control over the receiver. The gifter wants reassurance about the safety or physical location of the receiver. To ensure the parent remains in contact they 'gift' a mobile phone. As became obvious in some of the interviews, this was not always a successful way of encouraging the adoption of the mobile phone.

However, for George who gifted a digital photoframe to his parents-in-law, his experience of gifting was different. George reflected that it was not a success because:

"My mother-in-law still cannot get her head around the idea that I can take a photograph with a camera, I can put that digital image on to the computer and I can have it displayed on the computer. She still cannot see that as a photograph...I don't know what she actually thinks they are. At least once, every time I go back, she'll ask the question."

While George had negative experiences with adoption, he also had a very positive experience with his mother. When his mother semi-retired, George was delegated to purchase a computer and a desk and set it all up with the printer and scanner. While

technically he may not have paid for it, he did gift his time and knowledge. He reflected in a positive way about her interaction with the technology that he had purchased for her: “She’s been using that for about four years now without any problem. She’s quite happy.”

6.2.1.2. Alice – the disruptive transition process from landline to mobile phone

In her interview, middle adult Alice spoke of several different issues related to her adoption of the mobile phone. One was her initial difficulty in learning how to use the phone, the second was related to the pressure of answering calls – known as ‘telephone obedience’, and the third was her perspective that the mobile phone was only for emergency use when travelling (Moyal, 1995, p. 270).

It took Alice quite some time to become comfortable using her mobile phone. She struggled with dialing, storing numbers, retrieving voice messages and texts. The complexity of the device slowed down her adoption process. In addition to learning how to operate the phone Alice also had to work out how to connect to a network and purchase prepaid cards. As part of her adoption process, Alice relied on friends and family to help her learn how to use her mobile phone. It is possible that the learning curve involved in adopting a mobile phone was part of Alice’s reluctance to initially adopt one.

“We bought these phones for the purpose of keeping me and mum in touch while I was away. I bought them in January. I did absolutely nothing with them except keep recharging them when they started to make noise, for the last six months. Then about two weeks ago, before I was coming on this trip, I suddenly started to think, oh no I need to get this sorted. The funny thing is that in myself I was extremely scared of doing it. The first step was to register the phones somehow. That was the step I'd been avoiding doing. I'd noticed that whenever I started talking about it to friends I was getting myself all worked up, all tense, and all niggardly. That was quite interesting once I realised that was happening. But then I was overpowered by the need to get the phones up and running before I came away. I went on to the

internet and registered them up with ... In fact discovered, I knew I had to have a passport and stuff like that, I discovered it was a lot easier than I thought it was going to be which is not bad really.”

For Alice when she first purchased her mobile phone, learning the tasks behind each button was a challenge.

“So last night the phone makes a noise and says two missed calls. Oh! This is my mum been calling or something. So I actually attempted to navigate by myself, which I thought was a great step forward using these buttons that George showed me how to use. I got into what supposedly, I guess, telling me about the messages and it said something on the screen like, hello you’ve got a new message or something and then presumably there wasn’t enough room on the screen to tell me anymore about them. They must have been sitting somewhere, but I couldn’t figure out what button to press to either collect the message or finish that screen’s worth of words to tell me anything more about maybe what I needed to do to get the message. That was when it all went horribly wrong for me because the only options I seemed to have were exit or select, or something like that, I couldn’t figure out which to use.”

Once Alice began to use her mobile phone another issue rose in importance for her: ‘telephone obedience’ (Moyal, 1995, p. 270). Mobile telephone practice has become more flexible, allowing the making and receiving of calls when away from home. Furthermore people are prepared to not answer the phone when it rings, they can return calls at a later, more convenient time. Services such as call screening, answering machines, and voice mail were designed for landline phones for this very purpose – that is to relieve the pressure of taking calls the instant someone rings (Rakow and Navarro, 1993; Sterne, 2003). For interviewee Alice, ‘telephone obedience’ was a perennial struggle that she once conquered with a landline and now had to be revisited with a mobile phone.

“It took me years to leap from getting up to answer the telephone (landline) when it rang... How much worse is it when you’ve actually got the phone walking around with you? ... You’ve got to learn not to answer all over again, because it’s with you. It’s in your pocket. It’s beside you.”

Alice was the only interviewee to discuss the mobile phone in this way. It could be due to her reluctance to adopt as other interviewees generally held a more positive perspective when adopting. Alice’s strong reluctance to adopt possibly affected her experience, as she consistently raised barriers to adoption as documented throughout Chapters 6 and 7.

Because Alice was using her phone in an exploratory way, she was not keen to continue the use of the mobile phone when she was at home and not travelling. She was another non-user by Wyatt’s definitions (3.1.3.) (2003). As a way of rationing her use of the mobile phone and as a form of rejection of the device, Alice asked someone to show her how to block her number from appearing when she made calls.

In her interview Alice had even planned ahead to banish her mobile phone on her return home to the glove compartment of her car so that it would be handy in an emergency.

“It won’t be relevant. I’ll stick another \$20 on, but it will be a year before that runs out. It will just be useful to have. I may well do something like put the phone in the, I know it’s a bit dangerous, in the car glove box.”

Alice’s relegation of the mobile phone to emergency use only is consistent with many new adoptees (Rakow and Navarro, 1993). It is also consistent with historical findings about why women would need a mobile phone. Rakow and Navarro discuss how men encouraged their wives to adopt a mobile phone for emergency use (1993). One woman in their study stated that she owned a mobile phone for “safety

reasons. My husband kept getting on me about – that something might happen” (Rakow and Navarro, 1993, p. 151).

6.2.2. Vera and John

Vera is the older adult parent to her middle adult son John and his sister who lives overseas. Vera struggles with digital technology adoption, so the focus during much of her interview was on her inability to comprehend how to use digital technologies. The focus of much of John’s interview in relation to his mother was the assistance he provided to her so that she could perform everyday tasks. John had also purchased and installed most of her digital technologies at home.

6.2.2.1. Vera – technology user from an earlier era

Vera, as one of the few older adult interviewees, reflected on her early encounters with computers and digital technologies. Her first recollections of computers were of her children using the family computer to complete assignments. Vera also remembered that it was possibly:

“about ’83 or ’84 I would have started working on a word processor, ...then it would have been after ’89 that I got my first computer, and they’ve gone from massive big things that took up the whole of a desk, to things that you carry around.”

While Vera continued to work part-time and used a computer at work, she was not keen for other digital objects.

“No. I try and steer them away from anything digi. What have they threatened to buy me? Oh they’ve threatened to buy me an iPod, then it was a coffee machine. I don’t want one of them either, I’d rather walk up the street and buy my coffee.”

However, key to Vera’s profile in this study was her use of computers at work in her part-time role, but her complete lack of understanding and conceptual appreciation

of how they worked. This is discussed in more depth in Chapter 7, which considers issues of digital media literacy.

Vera's age and her lack of knowledge could be seen in her comments about wireless technology:

"See wireless is a word, wireless to me means something entirely different to what it means to you. A wireless is a great big brown thing with dials on it, that's a wireless"

Vera's understanding about what technology is and what it can be used for was very much tied to an earlier technological era. While she used more up-to-date technology in her everyday life, she more strongly related to technology from an earlier era. This indicates that she was not necessarily inept with technology, but just with technologies beyond a certain era. Vera's attitude supports Lim and Tan's contention that different generations bond with different technologies simply because of their exposure to that stage of technological development (2003). Wong also suggests that many older adults are slow or reluctant to use new technologies because they fail to see how it can help them in their everyday life (2006). When older adults do adopt a new technology 'they may select a brand and model that another peer or family member owns simply so that they can access help readily when assistance is needed' (Millward, 2003).

6.2.2.2. John – IT-literate and empowering Vera

John, Vera's middle adult son, was very adept with technology and worked within the IT sector. The language he used to describe technology and how he perceived it was the most developed of all the interviewees. From his point of view the mobile phone and Internet had distinct purposes:

"I see the mobile phone as primarily a telecommunications device; whereas the internet isn't ... I wear a 3G now, but I've only done that as a novelty to

see what it's like, but I really only use it for calls and SMS; whereas Internet is for other business and personal and for research and everything else."

John could also see the generations of technology sitting alongside the familial generations.

"When we were growing up, what was interesting and new to us, I suppose the introduction of the personal computer; where everyone had a computer in their home, or were starting to get it. I wonder what the next generation, what the big marvel is going to be when we look at them and think, God we're old! It's new and exciting them, and it's past us already. It's interesting to see because we're going at such a fast rate of development and evolution; what is the next big thing that's going to come along that the next generation is going to embrace."

John also spent a significant amount of time assisting Vera with technology and, like George reflected that his older adult parent was unable to conceptualise about digital technologies. George, a middle adult who was married to Alice, stated:

"When we were growing up the computer is part of our lives so we've got used to it. With mum, as an example, it's something that she's had to learn to use. She never understands it, she'll learn how to perform a function in Word ... but she won't really understand what she's doing, she doesn't understand the concept behind it".

This lack of conceptual understanding of technology for older adults will be discussed in greater depth in the following chapter.

6.2.3. Joanne – proactive digital mum juxtaposed with a resistant digital employee

Joanne, a middle adult, was in a long-term relationship and had a son, Alex and a step-son, Henry. Her family was a blended one made from two divorced parents. Although both boys spent some time living at both their parental houses, they obviously spend time apart from one of their parents at any point in time. The mobile phone provided them with a way of keeping in direct contact with the other parent at all times.

Joanne described her use of technology more in relation to her role as a mother than to any other part of her identity. She was a positive and proactive mobile phone user in relation to parenting. In this study, Joanne was the mother of the youngest child, Alex who was thirteen. When Alex was not at school he had an active social life that revolved around sport. Joanne used the mobile to keep tabs on him when he was away from home, or when she was at work.

Joanne spoke in her interview about when and why they purchased a phone for Alex.

“Alex got his phone for his birthday ... He got that for the sole purpose of when he was out because living in the estate he is, it’s very different to living on a normal street in a normal suburb. Here he can ride around and go and do whatever. He started to ask if he could go outside the estate. I said, I have no problem with you doing that, but if something happens we don’t know.”

So, much like the early studies into women’s adoption of the mobile phone, Joanne purchased a mobile phone for Alex for security, emergency and remote-mothering (Rakow and Navarro, 1993). These are also reasons why other parents purchase mobile phones for their children, as discussed earlier in section 3.2.2.1 (Carroll and Hartnell-Young, 2004; Kaare et al., 2007; Sciriha, 2006). Joanne’s mobile phone use was deeply entrenched in all aspects of mothering including remote-mothering, micro-coordination, and building intimacy with her son.

Joanne and her son involved each other in small moments and details of their everyday lives. When Alex was in New Zealand on holiday with a grandparent, they exchanged mobile phone video calls. Joanne described how this occurred in her interview:

“I’d got a video phone for my work ... so we both did video. So there they are in New Zealand with video and I’ve got video at work. So I’m showing them where the ferry is with my camera out the window of the Eureka Tower going, ‘Look here’s the ferry.’ They’re in the airport waiting at Auckland to come home, so I got to see them sitting there bedraggled.”

Alex also created intimacy with his mother through fun. He demonstrated his affection for her by taking and leaving photographs of himself on her phone, and changing her computer screen background and her mobile phone ringtone.

“The kids change my background constantly on my computer; I never know what I’m going to have. It’s either a moo cow or a car, or I don’t know. It’s always something different. It’s also the ring tones on my phone ... I’m waiting for my own phone to ring and they go; that’s your phone.”

In stark contrast in her work life, Joanne had become a reluctant mobile phone user. Her work life had become highly dependent on her use of the phone, and she felt that the incessant phone calls and SMS texts intruded significantly on her home life.

“When I had [her own business] I had the Blackberry, hated it. What do I hate about it? You’re never away from anything, you can never chill out for two minutes because you’re getting emails, SMSs, phone calls, everything: you’re attached to everything. People expect instant responses. I don’t like that ... I swear that I’ve had phonophobia for a year now, I hate it; to the point I use to switch it on to silent because I just got so jack of it going off ... in the old days you used to be able to say, ‘I’m sorry they’re out of the office; they’ll be

back at X time' ... People don't even have offices now, I think people just go straight to the mobiles."

Clearly Joanne preferred not to use a mobile phone for work purposes because she found it so intrusive. Her experiences fit with some of the results of Wajcman, Bittman and Brown's 2009 study into the use of mobile phones and work/life balance discussed in section 2.3.4.

6.2.4. Simon – fond of Internet based applications

Simon lived in a share house and for several months each year travelled overseas for work. While he was away he used Skype to keep connected with his father and his mobile phone with his niece. Simon's overseas experiences had fostered an Internet adoption and focus for his communication practice. He considered mobile telephony to be 'old school'. Simon explains that:

"in Australia there's still this mentality that you turn your computer on for maybe half an hour, an hour a day and then you switch it off. Whereas my friends overseas ... they have the computer on all day. So as soon as they come home, bang the computer comes on and they're up on Skype, they're up on MSN."

That said, Simon considered himself 'a bit of a laggard in terms of technology'. However, he was one of the few interviewees using Facebook. Simon liked Facebook because "It's more of a convenience thing, like going to Coles and buying your vegetables, milk, bread, and everything from the one shop. It's just a one-stop shop and saves you time to do other things".

Simon felt that the new laptop he purchased a few months prior to being interviewed had enabled his technological capabilities and his understanding had "jumped significantly". For example, his new laptop with embedded camera enabled him to be more adventurous with his Skype conversations. With a work colleague he shared vistas of his overseas location using Skype on his laptop, while in the past he

may have simply used photographs. The filmic nature of embedded cameras in laptops is discussed in more depth in Chapter 8, as webcams were used in creative ways by some of the interviewees using the new voice application Skype.

6.2.5. Linda and David – intrepid and confident older adopters

David and Linda were a retired couple who were confident adopters of technology. Early in their interview they discussed the need to update their technology, as a lot of the “stuff” they had was getting older. Linda described their situation:

“One time you’d have a camera and it would probably do you for a long, long, long time; it’s every six months, and they’re superseded. We ended up with kids’ things like videos and DVDs that they’re using, but we’re just waiting now. We are going to have to get a TV because the picture is getting smaller and smaller.”

Throughout their entire interview, David and Linda talked about purchasing and using a variety of technologies. While they were not early adopters they were avid consumers of technologies commonly used in family life such as telephones, computers, video recorders, DVDs, cameras, video cameras, and television sets. At the time of the interviews they were the only family that still used a dial-up Internet connection, so they struggled to use more advanced technologies. However they indicated that their Internet connection was part of a general technological overhaul planned by David.

David and Linda purchased their first mobile phone almost a decade ago in order to keep in touch with their family while they were out and about during a period of transition for the family – the impending birth of their first grandchild. At different points in their interview, Linda offered slightly different reasons for the purchase of their first mobile phone:

“When we first got the mobile phone it was merely because the kids had left home and if we were out and about and Rachel (*their daughter*) didn't drive.

So there's lots of little things, but slowly we use it more for some other things as well now. I'm thinking having two would be okay.” (Linda).

Clearly, after early limited use of the mobile phone, David – and perhaps Linda – was considering the purchase of another one. This indicated that the mobile phone had been domesticated in their lives. After their interview David and Linda purchased a second mobile phone.

For older adults, building an identity with the mobile phone means constructing a new set of telephone practices. Making a phone call to someone in decades past was a more formal procedure than it is today, where mobile phone callers hold conversations in public places such as on public transport, in the street, or at the supermarket. Phone calls were made at home or at work, perhaps from a phone at a neighbour's house, but not in public space. There was no need for individuals to have their own phone complete with its own phone number. So, for many older adults who are beginning to 'age in place' trying to understand how a mobile phone can be useful to them is difficult (Blunt and Dowling, 2006). As revealed by Rakow, older adults may have set social rituals about who to phone, when to phone, and where from (1992). This can be particularly difficult if they do not venture far from home. From an older adult perspective, there is no need for a mobile phone if most of the time is spent at home. This is discussed further in Chapter 7 as part of the discussion about digital media literacy and resistance.

6.2.6. Andrea – providing access to her family members

Andrea, another middle adult, had family living overseas. As an only child, the bulk of her familial relations were cousins who were scattered across continents. Their main communication was via email as they were able to send photographs back and forth.

When communicating with her parents, Andrea initially used emails and cheap phone cards, but for the last 18 months they have been using Skype. Andrea and her husband also connected her parents-in-law to Skype. Like Simon and Beth, Andrea and her husband began using Skype “because other people had been using Skype”.

Part of the problem with connecting her parents-in-law to Skype was that they still had dial-up access rather than broadband at home. Her parents-in-law were not particularly adept with technology, nor was her husband. Andrea explained that for herself and her partner, and for her in-laws, she was the person responsible for assisting with connecting technology. Andrea stated that her husband:

“can use the computer, but if there’s a problem it is always Andrea, can you do it, how do I do this. I’m not great but I’m better than him. I installed all the internet and everything here, because he was just, I don’t know how to do it.”

In Andrea’s interview, the main focus in relation to mobile phone adoption concerned her parents. Her parents shared a mobile phone and, like Alice’s parents, Andrea’s parents they purchased it for emergency use.

“I don’t think my mother has ever used a mobile phone; basically my father has got it. I think he just keeps it in the car. It’s the emergency car situation.”

Andrea related her parents’ slow adoption of a mobile phone to the fact that they did not use one in their work life. This supports Haddon’s contention that older workers who have little exposure to a particular technology in the workplace do not adopt it in their personal life (2005, p. 4 as cited in Ling, 2007, p. 2).

“It’s still also a generation thing, because my parents are 65 now, and they never had to use it work wise; so they didn’t have to use it when they started coming out. So it’s not really in their nature to have a mobile phone. Then again, I don’t really use my mobile phone a lot.”

The other anomaly within Andrea’s family was the gender divide in relation to technology use. The women in her family were the ones most adept with technology, not the men. This will be discussed in the following chapter.

Andrea was also innovative in how she used her technology. When the 3G phone was released, it enabled people to take photographs with an embedded camera (Goggin, 2006). This small change in the converged device brought about significant changes in photography – especially the way in which people recorded moments of their everyday lives for themselves and to share with others. In the extended interviews, two of the middle adults – Joanne and Andrea – shared how they used their mobile phone as a camera.

The photography discussed in this section relates to candid photography – that is photographs taken by ‘ordinary people’, those who ‘do photography in periods of leisure’ and who are ‘not serious in the *art* of photographic representation’ (Chalfen, 1987, p. 12). Ordinary photographers take photos because they act as memory prompts containing information that is meaningful to them (Chalfen, 2003, p. 142). For Andrea, the camera phone was used primarily for candid photography that was functional. Candid photographs lend themselves to being uploaded and distributed quickly via an Internet-enabled phone, a social network such as Facebook, or via email (Kato et al., 2006).

For Andrea, the mobile phone was not about taking photos. She described it in this way: ‘I’ve used the camera phone, but I don’t use the phone as a camera’. Later she described how she used her phone occasionally to take photographs for work but not so much for family-related things. However, she then recalled how she used her phone for functional purposes in the lead up to her wedding, much like she did for work.

Andrea described how she and her fiancé’s sister were shopping for flower-girl dresses. Both women liked a dress in the shop but did not like the ribbon on it, preferring the ribbon on a different dress. So they took a photo of the ribbon on the second dress so that her future mother-in-law could recreate it on the final dress.

This is not strictly ‘photography’ in the same sense as it has been understood in the past. It is a record of an everyday moment for a functional purpose. In the early

Japanese studies of the mobile phone, Kato et al. noted that the mobile phone was being used to shoot photographs of everyday things (2006). The mobile phone was so pervasive that this was beginning to impact on the types of photographs being taken, as the camera was always present (Kato et al, 2006, p. 305).

Chalfen contends that as part of 'home media', photography acts as a connecting device between family members because it assists everyone to remember each other, as well as places, events, and points in time they shared. Home media is not about the consumption of mass media but rather the creation of 'images made by family members, generally at or near home, and for us at home in personal and home-oriented ways' (Chalfen, 2003, p. 143).

As a form of identity, youth also use their mobile phones as an expression of their emotional attachment to the device, as a conduit to their family and friends, and as a repository of their treasured content (Vincent, 2009). Young people store and exchange gifts using their mobile phones. These gifts may take the form of photographs, videos, and text messages, and they are often saved as mementos (Keep, 2009; Taylor and Harper, 2002; Vincent, 2009). The gifts can then be viewed later as a form of emotional connection to the sender, and perhaps in remembrance of happier times.

6.2.7. Beth – intrigued by technology but not confident

In middle adult Beth's home that she shared with her husband and teenage daughter there were fast wireless broadband, three laptops and a PC, a landline phone, and a mobile phone each. Their mobile phones all had data plans attached. At least two of their computers had detachable webcams. Of all the families interviewed, they had the most sophisticated technology set-up.

Within this study three of the 11 interviewees indicated that they no longer had a landline phone in their home. John, Joanne, and George were the three middle adults with no landline phone at home. All three were mobile phone users only. Their choice of mobile only demonstrates the general move away from communal

technology towards private and individual adoption of technologies. This trend can be seen in the description of both communal and individual technologies in Beth's household. For seven out of the 11 interviewees, the landline still performed a role in their lives and had a place in their home. So, while every interviewee had access to a mobile phone, there were distinct reasons why some adopted a mobile phone and others kept a landline.

In Beth's home there was still a landline phone but each family member also had an individual mobile phone. Beth remarked that "the mobile phone, in our family, has definitely taken over from the landline" although she made it quite clear that there were different purposes for the different forms of connection. Beth used the landline phone:

"when I'm actually trying to organize appointments or someone to come and fix something ... I have so many phone numbers on my phone already that I try very hard not to put people into my mobile phone that I don't use regularly"

For Beth, the mobile phone was a device used for personal purposes only – to contact friends and family.

Beth was an intrigued user of digital technologies and not afraid to explore new technologies but she lacked confidence. The story she provided as background to her first experience with Skype indicated a curious and exploratory approach to technology. She lost confidence however, when trying to work out how to provide these services to others or understanding the intricate details behind setting up technology. Beth first experienced Skype through friends. It has now become integral to her daily life especially within the context of her relationship with her aunt living overseas. During her interview, Beth provided the story of her first encounter with Skype:

“I tell you, this is a funny story ... We went to dinner at these friends’ house ... The wife is French and her father lives in Provence, ... she has a sister in Lyon ... and she lives here in Melbourne ... She excused herself from the dinner table and went into her study and said ‘I have to talk to my father about something’ ... then I hear her talking really loudly, almost shouting, and another woman at the dinner said ‘Oh she’s using the internet, that’s Skype, and she’s shouting because her dad is hard of hearing’ ... then when she got off she showed me, she just said ‘You just go to Google, you type in Skype, it all comes really easily, and if you don’t have a microphone in your laptop you go get one’ ... The next day I was doing it, I couldn’t wait. I didn’t even know that I had a microphone in my laptop but I discovered that I did.”

This quote indicated that rather than allowing herself to be intimidated by new technology and applications, Beth actively sought new things to explore and demonstrated her curiosity in using technology and emerging applications by her quick adoption.

6.2.8. Amanda – using new technologies for the traditional weekly call home

Amanda was a confident user of digital technology. Like most of the working interviewees, she used a computer and mobile phone for her work and home lives. Amanda demonstrated her confidence by the manner in which she discussed the purchase of a new mobile phone during her interview.

“It’s an E70 ... I love this little keyboard. I did some research and the iPhones are great for music, but they’re not so good as a phone. The early iPhones, maybe the later one is better in that sense, because there were some things you just couldn’t do that you would expect to do on a phone. I think it’s the texting.”

During her interview she did not restrict the discussion to merely the model and its features but continued by discussing her telecommunication plan. She was clearly familiar with the plan’s features. Amanda also spoke about her computing

technology with confidence, and most importantly for this study in a manner that demonstrated domestication and incorporation. Her use of the word 'love' in relation to her monitor was a clear expression of the domestication theory's stage of incorporation:

"but I love my huge monitor, you see, which is why I haven't gone and gotten myself a laptop. I don't like laptops I have to say, I don't like the keyboards."

Furthermore, her use of the phrase 'I don't like laptops' was a clear statement about her incorporation and preference for desktop computers with 'huge' monitors.

As both Amanda's adult children were living overseas on different continents at the time of the interview, the main technology she used for communicating with them was Skype. Like Joanne, Amanda's digital identity was closely linked to that of her children and less to work. As a self-employed business-woman Amanda also used her mobile phone for work but, unlike Joanne, she did not have an active dislike for the constraints of the device.

Since both of her children were living overseas, Amanda communicated with them using Skype, email for photographs, sometimes mobile phones, and sometimes Facebook. While Facebook *per se* is not discussed in this thesis as most of the interviewees were not connected with family in this way, in Amanda's case she had access to her son's Facebook profile and could see content that he had uploaded:

"there's things there that you wish you hadn't seen ... my son's Facebook is great to check because he puts his videos, and his photos up there. Whatever he's been doing. They go up straight away so I go and check it every now and again. It's tricky because it's really a private thing with his own age group, and so he probably doesn't want his mother spying on him."

Nevertheless Amanda used Facebook for remote-mothering, to see what he and his friends talk about and do. It is interesting to note that Amanda used the term

‘spying’ to describe her viewing of his profile page, videos and photographs, and yet her son provided her with access to his profile.

Amanda was the interviewee who replicated traditional modes of familial connection through the weekly call home. In her interview, Amanda described how she and her daughter communicated using Skype:

“That’s just how we communicate. I just love Skype. They pull their laptop out onto their balcony, my daughter is sitting there with a cup of coffee talking to me, and I can see what they can see, so yes, it’s good.”

Her family had a set time each week for the weekly call home using Skype. It seems contradictory to talk about Amanda using the newest form of familial connection, Skype, while at the same time categorising the interaction as ‘traditional’. However, Amanda admitted during her interview that her family had not thought about or discussed communicating in a new or different way. Instead, they simply continued with their traditional half-hour chat once a week. Unconsciously, they used Rakow’s theory of telephone ‘visits’ with each other – that is, emulating the real experience by sitting in a pleasant location sharing a coffee during their Skype chat (1992). The weekly call home, Rakow’s theory of visiting, and the use of Skype is discussed in depth in Chapter 8 in relation to Skype and how some interviewees approached the weekly call home much in the same way as a face-to-face visits.

6.3. Conclusion

This chapter highlights the interviewees as individuals who are part of ‘recognisable families’ and discussed the diversity that occurs in the adoption of Internet and mobile phones by the interviewees (Hirsch, 1994). The vignettes demonstrated that the interviewees were adopting technologies in similar and yet diverse ways by providing insights into their individual adoption practices. These vignettes framed the diversity of adoption practices between individuals and have contributed to our understanding of how individuals domesticate the technologies they adopt. The findings discussed in this chapter indicate that clear roles are negotiated between

middle adults and their older adult parents in relation to domestication and adoption of communication technologies.

Middle adults are increasingly gifting their older adult parents mobile phones and other electronic gifts. Sometimes these gifts remain unused. Middle adult, Andrea described how she and her husband gifted her mother-in-law a mobile phone and how it was not used. Similarly, middle adult George gifted his parents-in-law with a digital photo-frame that was left unused. So, while the middle adults attempted to introduce their older adult parents to new technologies, in some cases they were unsuccessful. However, this did not apply to other technologies such as Skype, as will be discussed in Chapter 8.

For some middle adults, there was a tug between perpetual contact and mediating their contact. For middle adult Alice, the transition between using a landline phone and a mobile phone was a disruptive process. After beginning to use the new technology, she discovered how complex it was and had to re-learn how to avoid 'telephone obedience'. In contrast to Alice, middle adult Joanne struggled to obey the mobile phone each time it rang or beeped as in many cases it indicated work and the need for perpetual contact.

Another unique insight into the communication practice of the three generations was that some interviewees were stuck in particular trajectories – for example, computing – and demonstrated preferences for various modes of this device or its application. This was the case for Simon and Beth, who preferred the Internet for familial communication particularly when overseas. The new application Skype helped to foster this trajectory as it offered both voice and video for communication. With an increasing range of devices and applications, this is an area that needs further exploration.

Another area for further exploration is the use of communication technologies in particular spaces. Joanne was a proactive digital mum but was resistant to using her mobile phone for work. By her own admission, her knowledge of how digital

technology works was limited but she participated because it helped her to build and maintain a relationship with her son. In the workplace, however, she was disinclined to use technology. This suggests that the use of digital technology in positive spaces and environments leads to positive experiences and its continued use. If Joanne had used her mobile phone within the workplace in a way that reduced her stress, her experience of this technology within the workplace may be more positive and proactive.

The vignettes also revealed a diverse range of digital media literacy levels among the interviewees. It seems that literacy levels can be diverse not only among individuals but also within the individuals themselves. For example, Alice felt very comfortable with computers but was a reluctant late adopter of mobile telephony. It seems that early digital media literacy divides people into two categories: those who have skills and those who do not. The findings discussed in this chapter indicate that people can possess variable skills across multiple technologies.

Importantly for the outcomes from this thesis, variable skill levels may or may not manifest in a preference for a particular type of technology. Furthermore, a low level of skill does not necessarily prevent the use of a preferred technology. Skill levels may influence the types of communication technologies being selected by key family members for intra-generational communication. The level of digital literacy in each generation is a critical factor in intra-generational familial communication, and this will be the focus of the chapter to follow. The next chapter, Chapter 7, will focus on how the change to a digitally connected space requires negotiations between the middle adults and their adult parents, the older adults and the elderly. The negotiations that occur between middle adults and older adults are, the chapter contends, an important part of the domestication process of digital communication technologies.

CHAPTER 7: Digital Media Literacy in families

“Me trying to learn shorthand is like my mum trying to understand computer technology. I don't understand shorthand at all, and I would struggle to pick it up because I can't make head or tail of it. I think it's the same that I could be taught a squiggle is an F, but I wouldn't understand why and how she got the squiggle to be an F. It's the same with computers to her” (John)

7.0. Introduction

Previous chapters in this thesis have discussed the adoption and practices of the Internet and mobile telephone by the online questionnaire respondents and interviewees. However, not all the interviewees considered themselves confident users of digital technologies indicating that aspects of digital media literacy such as disinterest, resistance, rejection along with a lack of understanding about devices and connectivity were present among the families.

This chapter explores the results in relation to digital media literacy and the resulting tensions in relationships between the middle adults and their older adult parents. The change to a digital environment for families has a broader effect than simply the type of connectivity, or individual devices. For many individuals, moving from an analog environment and into a digital sphere is confronting, as the transition requires digital media literacy - that is an understanding of devices, forms of connectivity, installation and how best to use digital connectivity to connect with other family members. The interviews revealed that negotiations occur between middle and older adults as both generations try to understand the effect of the change to a digital environment on each other and navigate the path that most effectively enables communication and connection between family members. This chapter will primarily draw on the interviews held with middle adults, Simon, Beth, Alice, Joanne, John, Andrea, and George, and the older adults Vera, Linda, and David.

In this chapter context is provided by returning to the online questionnaire and considering whom the online respondents ask for help with technology. As digital media literacy requires people to become cognisant with technology, people may ask family members for help, so a question was included in the online questionnaire regarding whom people would ask for help from within the family. A brief discussion about gender follows, as the results for this question in the online questionnaire indicated that male family members were the first to be asked for help. The second section (7.2) begins with a general discussion about digital media literacy and inclusion in order to provide a conceptual framework for subsequent discussions of the interview results. The middle adults' perspective on the digital media literacy of the older adults in their lives (7.2) is then discussed. When the interview transcripts were coded they indicated that older adults show disinterest (7.2.2.1), resistance (7.2.2.2), and a lack of understanding (7.2.2.3) in relation to technology. The interviews also indicated that middle adults, in recognition of the child-parental bond and the responsibilities and tensions that accompany it, attempt to empower their older adult parents through various means such as education. A discussion of middle adult attempts to empower their parents is discussed in section 7.3.

Reflections on two individual's own digital media literacy is offered in the central part of this chapter. The discussion centres on the reflections of two female older adult interviewees, Vera and Linda who participated in the interviews, and is set out in section 7.4.1. The middle adults also recognized that they struggled with digital media literacy issues at times and some of their self reflections are discussed in section 7.4.2.

When the older adults in their lives have digital media literacy issues, middle adults provide task assistance in various ways, such as entering data into Excel spreadsheets or providing instruction. Section 7.5 outlines some of the ways middle adults assist their older adult parents. The chapter concludes with a discussion of an increasingly important aspect of technology use in the home, 'domestic networking'.

7.1. Who do they ask for help with technology?

Question 14 in the online questionnaire (see Appendix 1) sought to explore the issue of domestic networking. Participants were asked, “Who do you ask for help with technology? If you do not understand something or feel unsure when using technology (e.g. mobile phone, computer or the Internet), do you ask a family member for help? If so, which family member do you ask?”

These results presented diagrammatically in Figure 14 below, highlight that less than half 48.7% of questionnaire respondents replied that they would ask family members for help. Of those who ask family members for help, 30% would ask their son, 25% their brother, 5% their sister, and 20% their daughter. Only 10% were likely to ask their father or mother.

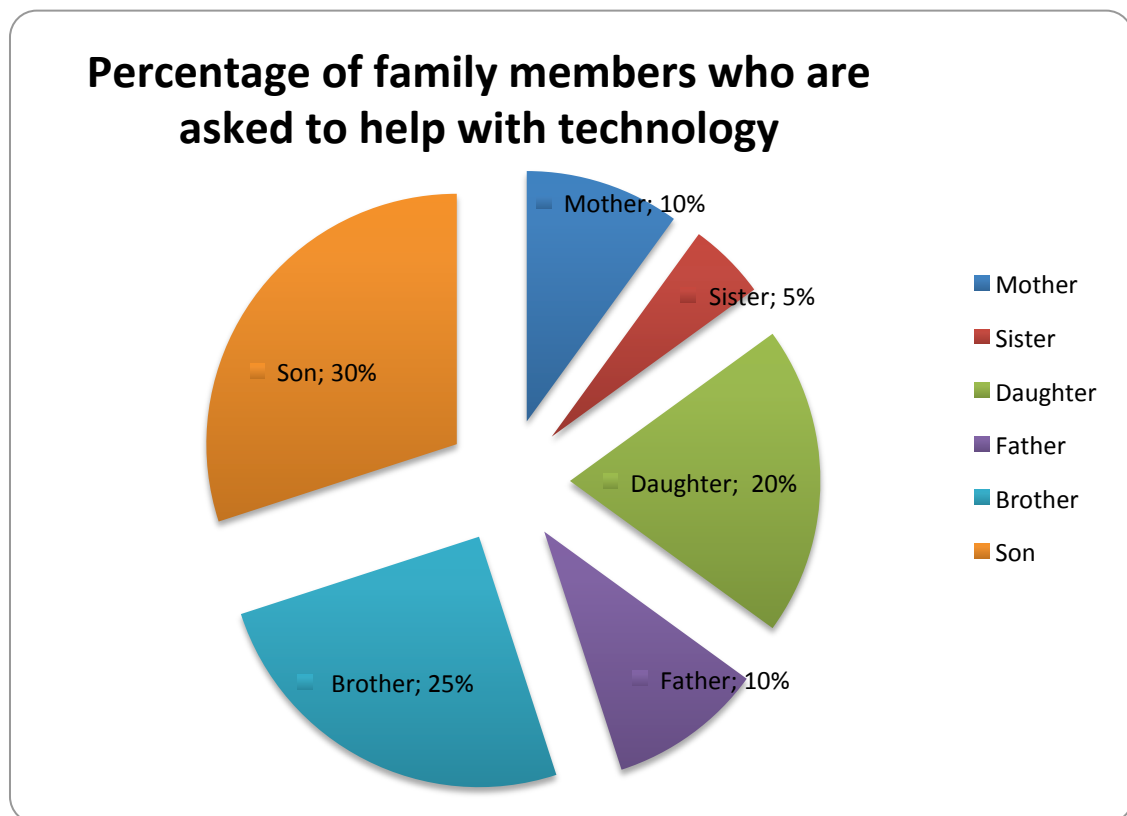


Figure 14: Percentage of family members who are asked to help with technology.

7.1.1. Gender

The results revealed that the overwhelming majority of respondents (65%) would ask a male family member for assistance with technology. Few (35%) would ask a female family member. These findings are consistent with other research such as Palmer's study on older women in Western Australia that focuses on gender and technology use (Palmer, 2011). The primary reason for not using the Internet for some Australian women is simply 'no interest' (Ewing and Thomas, 2010, p. 12; Palmer, 2011).

While men have traditionally been the early adopters, Australian women are now adopting the Internet in larger numbers. Statistics indicate that traditionally men are most likely to form the majority of early adopters of communication technologies and women are most likely to be secondary adopters of technology (Ewing and Thomas, 2010; Wajcman et al., 2008). In Australia the adoption trend continues with a slightly greater number of men (81.7%) than women (79.5%) using the Internet in 2009 (Ewing and Thomas, 2010, p. 9).

The shorter time span that most women have been using the Internet perhaps provides some indication as to why some women are less comfortable with the technological aspects of digital communication technologies. Being comfortable with technology is important because it assists in the ability to make decisions in relation to consumption and domestication (Schwartz Cowan, 1999, p. 263). Women are portrayed as being confident with using technologies that fulfil their domestic responsibilities such as the fridge and washing machines (Cowan, 1987) and the telephone for social communication (Dobashi 2005; Fischer 1988, Fischer, 1992; Wajcman et. al, 2008). Men are less active social users of technology such as the telephone (Lohan, 2001; Moyal, 1995; Wajcman et. al, 2008). There is no gender based research that indicates that women play a significant role providing technical or productive assistance with any communications technology other than the telephone, although women may play a role as mediators between their parents and the Internet (Bell, 2009, p. 27). This highlights the way in which generational factors cut across traditional categories such as gender.

Rakow contends that the telephone is linked to other domestic appliances that are 'operated by women as an extension of their other familial responsibilities' (1992, p. 50). Gray argues that traditionally women, even those technologically skilled at their place of employment, will defer their knowledge when at home to the male members of the household, effectively excluding themselves from building an additional skill set outside their domestic and familial obligations (1995, p. 240).

Amongst the older adult interviewees in this study, Linda reduces her own use of the family computer and Internet because her husband David uses it extensively.

"At one time I used to work all these things and do all these things...It doesn't take two of us on the computer, because he's there all the time, to do it, to find it. You don't go and get two lots of information, he's doing it. I use the computer very little."

In contrast, the gender divide is not apparent with middle adult interviewee Andrea's parents. Andrea reflected during her interview that her parents each have their own desktop computer; her mother uses hers to run a small home based business, and her father uses his to download his photographs. Part of the reason her mother has her own computer is that before retiring her mother worked in IT. Andrea reflects:

"I think my mother would go crazy if my father was using her computer... It's also because my mother is the computer wizard at home... I think it's also the way she can use it whenever she wants to use it, they can both be at the computer at the same time. They don't have to wait until one is finished."

Andrea's parents-in-law are divided more along the traditional gender roles in relation to the use of digital technology. Her father-in-law uses the computer for photography whereas her mother-in-law does not use it at all. This approach is also seen in Palmer's study of female seniors and Internet use in WA (2011, p. 16). Some of the participants in Palmer's pilot study stated they were happy to use their

computer and the Internet while others 'left the "technical" aspects of their households to their husbands' (Palmer, 2011, p.16).

7.2. Digital media literacy and inclusion

In the previous chapter the results revealed that the online questionnaire participants were using multiple technologies in their everyday lives and multiple methods of communicating with each other using these technologies. This places greater emphasis for participants on keeping skilled and up to date with the use of technology.

For the older adults in this study, their children - the middle adults - negotiated with them to have access to the technology and to the education required in order to use it. This negotiation process seemed to come naturally as part of the child - parent relationship. If anything, negotiation was a positive interaction as middle adults were then able to communicate with their older adult parent using a preferred method – for example, Skype. There was an unconscious acknowledgement that if the middle adults wanted their parents to use a technology, then they would have to provide all three aspects – access, education, and domestic networking.

Because their children, the middle adults, assist with technology purchases the older adults in this study did not need to use public access points such as libraries. However, public access points such as libraries also act as interfaces to the Internet (Bell, 2009; Bertot and McClure, 1998; Palmer, 2011). The accessibility of the Internet through libraries has grown significantly since the introduction of the Internet into local libraries in the late 1990s. In 1998, 90.5% of Victorian public library services had some type of Internet connection, and 58.5% of all library branches were connected to the Internet (Bertot and McClure, 1998, p. 5). It is estimated that around 10,000 public Internet access terminals were located in Victoria by 2004 (MMV, 2004, p. 3). In 2007, at the time of the data collection for this study, 1.6 million hours of Internet time were booked in public libraries throughout Victoria (Public Libraries Victoria Network, 2008, p. 1). By 2011 this figure had increased to 2.2 million hours of Internet time and over 300,000 wireless

sessions (Public Libraries Victoria Network, 2011, p. 1). Paradoxically, public Internet connections continue to increase along with home Internet connections. In Bertot and McClure's 1998 study, 59.1% of Internet users within Victorian libraries also accessed the Internet in other locations such as school 27.3%, work 6.1%, home 5.0%, 'other' 7.9%, and multiple locations 12.7% (p. 20). While no statistics are given in later reports, mention is made of the library being an additional point of access to contemporary Internet users (Public Libraries Victoria Network, 2008, p.1; Public Libraries Victoria Network, 2011, p. 1).

For low-income earners, public Internet access is vital, particularly for new immigrants who want to use facilities to keep connected with family living overseas. The Flemington Community Centre which provides computers and Internet access through the e-gaps program, recognised the need to maintain hours outside that of the local library to ensure that young people and particularly mothers were able to access its facilities (MMV, 2004b, p. 5). 'After dinner the women with families begin arriving and they rely on us for email and "livechat" to keep in touch with family and friends from their home countries' (MMV, 2004b, p. 5).

An important part of the library's role is to provide access not only to the Internet but also to training. While for many users access to the technology is the problem, lack of knowledge and lack of access to training also creates a barrier to use for others (Ewing and Thomas, 2010). Surprisingly, more Australian men than women have admitted that their non-use of technology related to their lack of skill with technology (Ewing and Thomas, 2010, p. 12). In 1998, 50% of the public library services offered public Internet training courses (1998, p. 15). In 2011 there were a number of ways that people can be trained how to use the Internet. The Connecting Communities Victorian government initiative started in 2001 has seen a wave of community-focused Internet digital media literacy programs operate over the last decade (MMV, 2004a). The e-Gaps funded program at the Flemington Community Centre is part of the Connecting Communities this initiative. Along with providing access these programs also provide training in how to set up an email account and browse the Internet (MMV, 2004b, p. 5). In 2002, the My Connected Community

program offered funding to 33 online communities that were part of the Victorian Council on the Ageing (COTA) (MMV, 2004b, p. 13). Another initiative, Senior Surfers was launched in 2008 and offered training to ten groups in the Victorian community who otherwise may not have had access to such opportunities (State Library of Victoria, 2010). The Victorian government has also initiated the Public Internet Access Program (PIAP) which helps organisations to provide free Internet access and online training (Victoria Online, 2011b). Since 2005, this government has awarded more than \$2 million worth of PIAP grants to over 300 community organisations in Victoria (i@PIA, 2009).

While the older adults in this study did not use Internet library access like others in their local community they could have made use of some of the other services provided – for example training. However, they chose not to. Research into why they did not make use of these services in order to improve their digital media literacy levels would be an interesting focus for further study. Perhaps as discussed in Palmer's study the format of training offered by their local library was inappropriate for their needs.

Palmer, who conducted a recent study into female seniors' use and non-use of the Internet in WA, recommends that training and technical support be provided in multiple formats to female seniors (2011). The formats suggested by Palmer, include a tech-help hotline, one-on-one training, and information sessions (2011, p. 38). As part of the Connecting Communities initiative, funds for training were dispersed throughout the greater Victorian community, and different Internet training methods were implemented depending on the community organisation. While there is no evidence for a tech-help hotline listed in Palmer's achievement results, other methods such as one-on-one training were implemented at locations such as the Flemington Community Centre (MMV, 2004b, p. 5). Another reason why the older adults did not make use of their local library for training may be embedded in their existing relationship with their middle adult child or children.

7.2.1. Domestic networking and the digital media environment @ home

In 2007 ACMA reported on the technology domesticated within homes. Less than 10% of Australian homes were without access to the Internet; DVD players were in almost every home; three quarters of homes had a device such as an iPod or MP3 player; and one-third of homes contained portable DVD players, DVD recorders, and hard-drive recorders (p. 5). In 2010 a Telstra study revealed that over 50% of all Melbourne homes used four Internet-enabled devices indicating our growing sophistication with respect to our adoption and use of digital technologies (Thom, 2010, para. 3). The consumption of multiple media now also extends to the telephone and confirms Gergen's (2002) contention of progressive privatisation discussed in Chapter 3.

The explosion of multiple devices places greater emphasis on the need for individuals to be digitally literate. When family homes had a single device, it was sufficient for one person to be media literate. In the home, this could be seen with men reportedly being in control of entertainment technologies such as the television set or VCR and women in control of domestic appliances (Gray, 1995). With individual devices, digital media literacy is necessary for everyone. All family members need to know how their individual devices function in order to be able to effectively communicate with each other and the wider world.

A specific context recognized by Palmer and this study is the need for setting up equipment within the home, called 'domestic networking' by Grinter et al. (2009). For Palmer's seniors, home visits were the best possible solution, as telephone assistance by telecommunication providers was often inadequate and confusing for seniors unfamiliar with the terminology involved (2011, p. 38). At the Upper Beaconsfield Community Centre older adults were reported to have found the Internet facilities increasingly important, and preferred accessing the Internet at the centre rather than at home 'because they don't need to take responsibility for maintaining and paying for a home connection' (MMV, 2004b, p. 6).

In this study the older adults mainly relied on their children, the middle adults, to provide maintenance for their digital technologies. A reliable contact for domestic

networking for older adults is essential. In Bell's study of the use of technology within the South Australian community, she discovered that for some family members their role included not only technical support for a parent or their family, but also being the interface between the family member and the Internet (2009, p. 27). This was expressed by one of the participants in Bell's study, Tess, as 'My Dad thinks I am Google' (Bell, 2009, p. 27). In this study David, an older adult parent, reflects that when he needs help with their computer or Internet connection, it is his son that he turns to for help.

"We had some friends around and he was playing around with it and he was saying you should get this and you should get that... So I mentioned it to my son and he said, "I've got a couple of gigabytes of RAM which I've taken out of an older computer; I'll bring them round".

ACMA has recognised the need to increase consumer awareness of domestic networking and service convergence in the home. Hopefully, the implementation of the National Broadband Network (NBN) will be accompanied by some education programs to assist those most in need (2011). At present, consumer domestic networks from a communications perspective is an under-investigated area. Future research into this question – Who do you ask for help and why? – may provide useful information about end-user perspectives of their domestic networking requirements, especially within an NBN space that will offer a wide array of products and services.

7.2.2. Middle adults' perspective on the digital media literacy of older adults

During their interviews seven middle adults (Simon, Beth, Alice, Joanne, John, Andrea and George) reflected on the older adults in their lives. In the interviews, the middle adults perceived the older adults as creating barriers to digital communication technology adoption beyond the common domestication barriers of purchasing, set-up and maintenance. These common potential domestication barriers and how the study families overcame them are discussed later in this chapter in sections 7.3 and 7.6. In their interviews, the middle adults reflected that

the older adults had erected additional barriers to adoption and use. These barriers were not in relation to the hardware or software as the middle adults had eliminated these. The older adults' responses to digital communication technologies were scattered on a sliding scale of interest. Some were interested in technology but stopped after they no longer saw a use for it (disinterest), some accepted their technology as a gift and then did not use it (resistance) and others adopted technology but then forgot how to use it (lack of conceptual understanding). These three barriers were identified and categorised during the thematic coding of the interview transcripts. These barriers were not unique, as similar barriers have been observed in other studies such as those conducted by Palmer (2011), Haddon (2000) and Wyatt (2003).

7.2.2.1. Disinterest

Middle adult Joanne was one of the few who expressed frustration with her parents' lack of skill with communication technology. Joanne's mother lives in another state, and her lack of technical skill with her computer means that neither Joanne nor her son can send her mother emails or digital photographs as ways of keeping emotionally connected. Joanne's mother is unlike the majority of older adults who have begun to use digital technologies in order to stay connected with family (Ewing and Thomas, 2010, p. 20). In order to communicate with her mother Joanne relies on the telephone - either a landline or mobile phone. Her main concern is that her mother is increasing her social exclusion by not learning how to use digital communication technologies. Joanne describes her mother as computer illiterate:

"She's got her own laptop now; unless you tell her how to do it and how to go about it, it's useless."

Joanne's frustration with her mother's lack of technological skill is taken from a position which sees non-use 'as a sign of a deficiency to be remedied or as a need to be fulfilled' (Wyatt, 2003, p. 79). This is the perspective held by most people who use technology - that is those who do not will be won over at some future point in time when in fact those who do not may be part of a group who legitimately do not see

the need for using digital technology (Wyatt, 2003). Wyatt calls the group who have used technology and rejected it 'rejecters' (2003, p. 76). Rejecters' reasons for their non-use may include (and are not limited to) boredom, cost, or satisfaction with their current sources of obtaining information (Wyatt, 2003).

In contrast to Joanne, middle adult Beth talks about how her father-in-law once used Skype to talk to his younger son who lived overseas, but once his son returned to Australia he hardly used it. Her father-in-law lost interest once it was no longer needed as a tool for communicating with his son. He went back to his previous method of contact - landline phone - and therefore could be labelled a 'rejecter'. Although Beth's father-in-law still uses the computer, he is no longer interested in using Skype. According to Wyatt, rejecters are a group of active non-users who may or may not have tried to use a technology and rejected it, an unlikely perspective to be considered by those keen on technology use. A clear analogy that Wyatt uses for her argument is that of the different perspectives held by cyclists and car drivers to transport and travel in everyday life. Wyatt draws on her own experiences as a cyclist to illustrate the different perspectives. One example she gives is that of new shopping complexes being located in out-of-town areas that potentially favour the needs of car drivers rather than cyclists or pedestrians (Wyatt, 2003, p. 72). Wyatt contends that the perspective and needs of non-drivers is not likely to occur to others, so intrinsic (and one could argue, dominant) has car driving become within our communities (2003). It could be argued that this dichotomous approach between the needs of cyclists and car drivers is the same as the one between technology users and non-users when viewed from the user perspective. Why do non-users show disinterest in using technology or in more fully using the technology they already have? This is a question that remains outside the scope of this thesis; however, it is an issue worth examining in the future particularly if the numbers of Wyatt's 'excluded - those who have never been able to gain access - and 'expelled' - those who have stopped using the Internet or digital technologies either through cost or lost access - increase.

7.2.2.2. Resistance

Another barrier, 'resistance', was identified by some interviewees not as rejection or ignorance, but rather more subtly as something in between. In contrast to Joanne's mother who did not know how to use the technology and showed no interest in learning, Beth's mother-in-law had access but erected barriers to its use such as forgetting to take her mobile phone with her. Perhaps older adults such as Beth's mother-in-law resist using technology because, as Haddon notes in his study of the elderly, 'existing interpersonal and mass media already facilitate enough participation in the social world' (2000, p. 401).

Beth explains that she finds her mother-in-law's resistance to using a mobile phone to be frustrating:

"James's mother, ... was a nurse and a relatively intelligent woman, she just refuses, she has a mobile phone and won't use it, or she forgets to take it, but even if she took it you'd probably never get her to answer it, or she'd forget to have the thing charged anyway. There's always an issue with the usage, she fights it. It's the same with the Internet."

Beth's mother-in-law actively rejects using digital technologies such as the Internet and the mobile phone. In Beth's words 'she fights it'. Even though Beth's mother-in-law had access to the Internet and possessed her own mobile phone, she actively resisted using them. Unlike Joanne's mother, who displayed a lack of skill and disinterest in learning and improving the skills that she did have, it seems that Beth's mother-in-law fits Wyatt's description of a 'rejecter' - someone who has stopped using the Internet (or for the purposes of this discussion, digital technologies) because of boredom, cost, or ability to gain information elsewhere (2003, p. 76).

For Beth, her mother-in-law's resistance may have been especially perplexing as her own aunt was a keen user of digital technology. Beth and her aunt communicated daily using various communication methods such as Skype, instant messaging, and email. There was perhaps a special motivation for Beth's aunt as she lived overseas and the geographic distance was greater. If they did not use digital communication

methods to keep connected, their relationship would have been limited to her aunt's annual visit to Australia, the telephone, and letters. In the relationship between Beth and her aunt, digital technologies increased the potential for communication in line with the World Internet Project (WIP) study. According to the WIP study, 65% of Australians feel that Internet access has increased their contact with family (Ewing and Thomas, 2010, p. 23).

Another interviewee from this study, George, discovered that his mother began to use a computer "when my brother had his children, because she wanted to learn the technology knowing that the grandkids would learn it". Having remote family members living overseas encouraged older adults to go online in order to use email and to be able to send and receive photographs (Palmer, 2011). Ewing and Thomas reported an increased usage of the Internet in older age groups with the 50–64 age group increasing from 66.1% in 2007 to 79.2% in 2009 and those aged 65 or over increasing from 29.8% to 40.0% over the two years (2010, p. 9).

There is also evidence to support familial connection as an important motivation for older adults to use technology (Palmer, 2011; Ewing and Thomas, 2010, p. 20). HCI researchers have conducted investigations into intergenerational communication - that is between grandparents and grandchildren - and report that the motivating factor is generally grandchildren, with increasing interaction possible through devices such as Internet-enabled storybooks (Raffle et al., 2010, 2011). In the case of the interviewee Beth, however, it was the close bond between her and her aunt that drove her aunt's adoption of the Internet.

Andrea's mother-in-law displayed a similar reluctance to use a mobile phone, even though the family had gifted her a phone. This reluctance did not appear to shift even though her husband was also keen for her to use the mobile phone.

"She wasn't very keen on using it. We said, 'Okay, it's here now,' because we were up there a few weeks before Christmas and then went back for Christmas. We said, 'If you haven't set it before we get up there, then we'll

do it.’ Obviously, we were there at Christmas and Christmas was crazy; so we never, ever went to set her up on the mobile phone. We were waiting for her husband to take her down, because he has always been keen to have a mobile phone. So we're still waiting for him to go with her. I'm assuming she hasn't done anything because she hasn't told us that she's got a mobile phone number. I'm assuming nothing has happened, but that was the idea to get her on the mobile phone, but we haven't quite succeeded.”

The resistance to using digital communication technologies expressed by Andrea's in-laws was not limited to the mobile phone. In preparation for Andrea's husband spending an extended period of time working overseas, Andrea and her husband spoke with her parents-in-law about using Skype. Andrea's in-laws were not great computer users, so Andrea found it “quite challenging to talk to them about Skype”. Andrea and her husband taught his parents how to use Skype in advance so that when he travelled overseas for work they could stay in touch this way, “So we set them up on Skype which was a bit of convincing...we've talked to them already from here, just to make them get used to it”. By piloting or trialling Skype before it was a necessity to use, Andrea and her husband removed most of the fear and resistance by his older adult parents.

7.2.2.3. Lack of conceptual understanding

A lack of conceptual understanding is the third barrier offered by middle adults regarding their older adult parents' levels of digital media literacy. Unlike disinterest or resistance, a lack of understanding is not tied to their inability to use the device, but rather their inability to recall or learn new features since they fail to understand the basic premise on which it works. For these adults, a lack of understanding caused confusion and they often self-deprecated their abilities with the device and its applications.

Older adult Vera failed to understand digital technologies and demonstrated this lack of understanding in her everyday practice. She did not understand what new digital communication devices did and how she could use them better. While her son John

could explain to her about how a particular device worked and had indeed provided written instructions when needed, Vera often failed to comprehend how things correlated, even if it is a daily task. Therefore when something went wrong, Vera gave up hope and stopped even trying.

For example, while Vera used a computer at work and knew how to store and retrieve files on it, when it came to something a bit different she is had no knowledge of how to perform the task. When asked about saving photos, Vera replied that she had photos of her grandchild on her work computer because the photos had been sent to her via email and she saved them to the hard drive. “Someone must have shown me how to do it. Probably”, and she specified a work colleague.

Vera’s experience is not uncommon. Palmer reports that in her study of older adult female Internet users and non-users, a ‘lack of knowledge was a major barrier’ among her study participants who had not used the Internet and those who had, but who wanted to use it more (2011, p. 5). What was important in Vera’s case, was that while she had difficulty using technology she persisted - albeit with help from others. It is important to acknowledge that she did ask for help and assistance from her son John and work colleagues when appropriate. Vera had not become a rejecter in her private life thanks to the encouragement and support from others. Vera persevered and continued to use digital technologies at home.

Some researchers believe that it is easier for older adults to negotiate a technology if there is some level of familiarity (Haddon, 2000). In Haddon’s study of young elderly, his participants were likely to adopt technology later in life if ‘these ICTs were perceived as extensions of what was familiar and useful in relation to current activities’ (2004, p. 398). Haddon’s participants were also likely to adopt technologies if they had been around for some time and if they had seen them in use by ‘peers and especially their own children’ (2004, p. 398). This may explain why when middle adults encouraged their older adult parents use of Skype through the computer, their parents were more comfortable with the idea. It is possible that

their parents had had exposure to computers at work or at home and if being encouraged by their middle adult children, they had the confidence to use Skype. The technology was familiar, so it was only the particular software and practices associated with Skype that were new.

Andrea's parents both had a mobile phone but did not 'really use it'. Andrea said that her father used it occasionally.

"He uses it occasionally. He's not a person who says, 'Have got, keys, wallet, mobile phone'. It's only keys, wallet. He doesn't use it on a daily basis."

To Andrea, the reason for this is that her parents "never had to use it work wise ... so it's not really in their nature to have a mobile phone". This observation supports Haddon's contention that unless older adults have some familiarity with a device or technology in the work place, they are less likely to adopt it readily (2000, p. 398).

In George's case, he thought that his photographs would be the familiar point in the gifting of a digital photo frame. George thought that the recipients would relate to his photographs irrespective of whether they were in hard copy or soft copy. George discovered however, that the recipients saw no association between himself and the photographs that appeared on a digital photo frame.

George had purchased a digital frame for his wife's parents, thinking he would be able to regularly upload the frame with photographs he had taken without having to go to the trouble and expense of printing copies and placing them into albums as he had done in the past. George expressed his disappointment at this recent gift to his in-laws going unused.

"Neither of them have really grasped the digital frame yet. Once they can see it, they're quite happy to sit there and watch the photographs go round, but actually turning it off and turning it on again, and getting it to do it again is beyond them."

The digital frame sits proudly in the sitting room on top of the television set, unused. George believes that it is unused for several reasons. First neither his wife Alice nor her mother understand how it works, even though he has patiently explained how to operate it several times. Second, George believes that his mother-in-law, who is in her early eighties, has no conceptual idea of how his photographs can be shown on such a device; therefore, while she admires the photos she does not really believe them to be ones that he has shot. To his mother-in-law, photographs are shot on film and then printed. The prints are then compiled into an album. An electronic photograph is not something she can comprehend.

“My mother-in-law still cannot get her head around the idea that I can take a photograph with a camera, I can put that digital image on to the computer and I can have it displayed on the computer. She still cannot see that as a photograph... I don’t know what she actually thinks they are. At least once, every time I go back, she’ll ask the question.”

Assisting others to use digital technologies is more complex than simple access and provision. Within their own lives the middle adult interviewees like George encountered examples of the complexity involved in assisting older adults. A more productive long-term solution is to move beyond access and towards empowerment.

7.3. Empowering older adults

Empowering older adults involves providing access as well as education. As discussed in the previous chapter Internet access may be public or private. The discussion of Internet access in this study is within the context of access within the home or through personal mobile devices. None of the older adults participating in this study or older adults about whom the middle adults spoke used public access as a primary Internet source. As part of trying to encourage their parents to use digital technology, middle adults needed to provide access to the devices and the Internet for their older adult parents.

Several participants raised the issue of the need to teach their parents how to use digital technology. The technologies ranged from DVD players and recorders through to computers and mobile phones. Different approaches were taken by the participants to teach their parents how to use technology. The approach taken seemed to depend on the personality of the parent as well as their level of familiarity with the technology and their understanding of how it worked or what it was capable of doing. Some participants provided written instructions and guidelines while others encouraged their parents to enrol in a short course.

7.3.1. Supporting access

For some of the middle adults empowering their older adult parents involved assisting with access as well as education. Providing assistance to access may included purchasing or gifting digital technology to older adults in order for them to use the technology. Haddon observed that 'although many of the young elderly were affluent enough to afford whatever they wanted, gifts of ICTs were sometimes important' (2000, p. 400). In Wong's study of older adults living in nursing homes in Hong Kong, two thirds of the mobile phones used by participants were bought by their children (2006, p. 187). In his study Wong delineates between 'gifting' and purchase by stipulating that a small percentage of the mobile phones had been gifted by grandchildren. For some people providing access through purchasing or gifting the devices created a financial burden for the receiver as accessories and ongoing use of the device needed to be serviced by the receiver unless the additional costs were provided as part of the Internet access bundle. This financial burden is often one of the reasons that people do not connect to the Internet at home (Haddon, 2000; MMV, 2004a).

In this study John and George were perhaps the two most proactive participants in terms of assisting their family with access to digital technology. Their level of assistance ranged from providing knowledge about items to purchase, setting up the devices, to helping with the use and instructions. Their assistance spanned a range of technical devices that included digital communication technologies such as

computers and mobile phones, and domestic digital technologies such as cameras and DVD players.

John was very tolerant of his mother Vera's lack of technical ability. He was proactive in assisting her with a wide range of tasks, and he helped her with her computer software, her entertainment system, personal laptop, and the setting up of a wireless connection. He considered her lack of skill within this context:

"My mum learnt how to write shorthand, which is a lost art these days, especially with the voice recorders and what have you, there's no need to write shorthand, but I think that's fantastic. It is essentially another language, all the squiggles and things like that. I would contrast that to me trying to learn shorthand is like my mum trying to understand computer technology. I don't understand shorthand at all, and I would struggle to pick it up because I can't make head or tail of it. I think it's the same that I could be taught a squiggle is an 'f', but I wouldn't understand why and how she got the squiggle to be an 'f'. It's the same with computers to her."

George supported his mother's need to learn about computing by providing access to a computer and its accessories so that she could understand the technology that her grandchildren were learning to use.

"So when she semi-retired at 59 she had me go out and get her a computer and a computer desk and set it all up with the printer and scanner. Then after a couple of years I built her one of those shuttle systems and she carried it back home with her because that had a little carry bag at the time as well. She's been using that now for about four years without any problem."

Middle adult Beth, who admits to having few technical skills herself took a different approach to her aunt's adoption of Skype. Beth drew on the technical abilities of her husband and her aunt's neighbour, and her husband James talked her aunt through the process of installing Skype over the phone. Then Beth contacted her aunt's

neighbour by email and asked him if he could purchase a webcam and install it on her aunt's computer. The helpful neighbour was in a sense acting as a technical person on behalf of her aunt, and according to Palmer, employing a technical person is a good solution for older adults but not available to all (2011, p. 15). Not all older adults however can afford to employ a technical person to assist them with setting up their home-based computer or to solve problems.

Middle adult Andrea, who has good technical skills, helped her parents and her parents-in-law set up their digital technologies. As discussed earlier in this chapter, Andrea and her husband gifted a mobile phone to encourage her mother-in-law to use one; they also installed Skype and taught his parents how to use it to keep connected with them in Melbourne and while he was travelling overseas. Andrea also installed Skype on her mother's computer. While each of her parents had their own computer Andrea's mother used her computer more often than her father. Andrea's mother, who had her own business was also likely to be on the computer around the same time as Andrea, making it easier for Andrea to 'catch her'.

Physical barriers to access also exist. Older adults may also potentially feel that they are now in 'an era in which they will only marginally participate' (Raban and Brynin, 2006, p. 44). If someone cannot negotiate some form of identity with the digital technology such as a mobile phone, then they are likely to self exclude, and remove themselves from communicating with others. This is the underlying concern behind many studies on older adults that focus on the digital divide - that is if barriers cannot be overcome, then many people will be left behind.

Barriers erected by their older adult parents are apparent to the middle adults interviewed for this study. John (Vera's son) reflected:

"I think the size of the buttons is a valid excuse, but I think it's masking something else, and they're just offering that as an excuse. There are mobile phones out there that are designed for people who just want to use it as a phone."

These comments indicate, as previous studies have, likewise that these physical limitations to access need to be addressed. Human Computer Interaction researchers in Scotland are investigating how to integrate mobile telephony into the lives of older adults through the UTOPA project (Dickinson, 2003). Independent organisations with interests in assisted care such as Novitech (2007) in South Australia, are investigating which physical factors could be improved on mobile phones to aid their adoption by older adults. Finally user design organisations in conjunction with phone manufacturers have developed specific phones like the Jitterbug in an attempt to win part of the increasing market share (Garrett, 2007).

For older adults, it may be overwhelming to use a new device that requires additional skills unless there is an incentive to do so. A lack of physical dexterity, skill and understanding of mobile telephony are among the greatest barriers for use for older adults (Dickinson, 2003). Physical limitations such as small keypads, overall size, and small-screen resolution are common reasons given for self exclusion. During her interview, middle adult Alice remarked on small key size and how for both her and her mother it is a hindrance when using a mobile phone:

“I can’t see her fiddling around with all those tiny buttons. They may be big by your standards, but by our standards they’re minute. The biggest available, but still minute. An immense hurdle overcome, I suppose. I may still at some point try and start to fiddle with the thing and try and understand, now I’ve got the manoeuvring thrusters under control, as it were, but there are certain bits of it that are not intuitive.”

Some research recognises that older adults are not necessarily afraid to use technology or mobile phones, but instead have strategies ‘to utilize, disguise or “resist”, the technology in their lives’ (Dickinson, 2003, p. 4). Raban and Brynin (2006) suggest that older adults simply take longer to learn how to use technology which has been observed during hands-on programs for seniors, ‘What we’ve learned is that seniors learn at their own pace, and in their own way’ states ASCCA

founder Nan Bosler (Telstra, 2008). Wong, in his study of older adult use in Hong Kong nursing homes also demonstrates that older adults - especially those physically isolated from family and friends - are still able to learn how to use mobile phones, and are keen to do so (2006). In Wong's study older adults wanted an individual phone so that they did not have to negotiate the use of a communal phone.

Part of a new journey is exploring new things and this may include the positive experience of using new technologies. Telstra's Connected Seniors initiative launched in 2007 encouraged older Australian adults to keep connected with their friends using digital technologies (Telstra, 2009). It is a Telstra funded, community-based program for older adults offering information and educational support through local organisations. It was created to help older Australians learn more about new technology primarily the Internet and mobile phones. In conjunction with the program, but not compulsory for participation, Telstra offers a phone and low-cost monthly plan to assist seniors with the transition to mobile phone use.

7.3.2. Supporting education

The first use of the Internet or Internet-related experiences can often be mediated through friends and family use (Haddon, 1999, p. 3). Early experiences can also be undertaken in public spaces such as libraries and community centres, as discussed earlier in this chapter (MMV, 2004a; MMV, 2004b).

Peer-to-peer learning is another key way to experience the Internet and its applications (Palmer, 2011). Palmer reported that 'although a couple of participants mentioned positive experiences when being tutored by a younger person, the dominant view was that tuition "by seniors, for seniors" would be preferable, with both parties "thinking on the same level"' (2011, p. 26).

Among the interviewees for this study, middle adult Simon remarked on how he had generally observed that people learned to use new applications if a friend showed them how:

“I find that’s the way it works. Generally you’ve got to find someone who knows how they can apply the technology, and they take you aside and say, you’re doing that, why don’t you use this?”

Simon admitted that his technological skills were limited - “I’m a bit of a laggard in terms of technology” - but he had taught and encouraged his family members to move into using digital technology so that they could keep in touch with him and ‘reduce the tyranny of distance’ when he was away from Melbourne.

Other participants learned through peers too. Middle adult Andrea talked about her and her husband’s adoption of Skype in terms of learning through others and peer pressure.

“We started using Skype because other people had been using Skype ... We’ve got friends in Dubai who’ve been using it for ages, and friends in the UK have been using it for ages, especially the guy in Dubai. He kept on telling us you’ve got to go on Skype.”

These remarks match the findings in previous studies. Peer-to-peer learning, especially for older adults, can make large problems seem small as friendships form and what seems silly at first ‘means that they can learn through laughter’ (Palmer, 2011, p. 16). People have the opportunity to face their fears in relation to computing and the Internet in a safe environment with help at hand. In the Connecting Communities project, one older adult Wendy went on to be a trainer herself (MMV, 2004b, p. 9).

Classes through libraries and publically funded organisations such as community centres provide classes for all members of the community (MMV, 2004a). Simon had also encouraged his father to attend computer and Internet classes - ‘I’ve sent my Dad to Internet class’ - to expand his knowledge of computing, and to provide him with additional skills so that he could participate and enjoy Internet-based resources. Simon stated that:

“Certainly with my dad it's like a whole new world... I've showed him how he can read the newspaper in London for example, because he's British.”

Connecting with people through email and being able to connect in small ways such as reading the newspaper from their home countries are strong reasons for older adults to connect to the Internet, as discussed previously in relation to the Flemington Community Centre and the e-gaps program (MMV, 2004b, p. 5). As people age their worlds grow smaller, and providing as many links as possible to the world outside increases socialisation for older adults and the relevance of using digital technologies (Blunt and Dowling, 2006; Haddon, 2000; Palmer, 2011, p. 16).

Building additional skills with technology is important for middle adults - not only for their own use but also because these skills can then be passed along to their older adult parents. For example, middle adult Andrea and her husband taught Andrea's parents how to use Skype when they were visiting their home overseas. After watching Andrea and her husband use Skype to talk to friends back in Australia and learning what could be done, 'My parents were just, wow, you can do that all on Skype?' Andrea's parents also quickly became Skype users.

7.3.3. Empowerment fuels innovation

The empowerment of older adults through the assistance of their children, the middle adults, either through education or supporting access can have far-reaching effects. John and George assisted their families by providing access to technology, as discussed earlier in 7.3.1, while Beth organised the purchase of equipment for her aunt through her aunt's neighbour and then organised for it to be set up by her own husband James. Each of these middle adults was proactive in providing access and education in order to upskill their older adult relations. However, it is only David and Linda while reflecting on their own use of technology provided an example of how empowering older adults led to them to not only use the technology but find and initiate innovative ways to connect with each other.

During their interview older adults David and Linda recalled this story about how they connected with David's brother while he was on holiday in Austria. In 2006, David and Linda discovered that by using a combination of media, they were able to view webcam images of David's brother and his family on holiday in Austria. David's brother who was based in England, (and was himself an older adult), sent David an SMS telling him that he would be in a particular location to meet some people to go walking. At this location, he explained, were four web cameras, and if David viewed a website at a particular time he and Linda should be able to see them. At the appointed time, David and his wife logged into the Internet from their Melbourne home using a dial-up connection. When David saw his brother move into range of the camera he sent him a SMS. In Linda's words:

"You could make them out, but it's not very clear. He texted them and said 'We've got you. Wave'. And you could see them going into the pocket to get the phone out and then there they are waving."

While this is only one story from one couple participating in this study, it does show the potential for other similar stories of innovative use of technologies by older adults. Most importantly, it shows that not only can older adult be taught how to use digital technologies, but once empowered they can find their own innovative solutions to potential barriers of communication through distance or device. It also demonstrates that older adults have the ability to be innovative across not only geographic boundaries, but also - as in this case - across multiple forms of connection such as mobile telephones, the Internet and webcams in order to hold a single conversation.

7.4. Reflections on digital media literacy

As part of the interview process, interviewees reflected on their use of digital technologies and sometimes these reflections included thoughts about their own lack of literacy in relation to digital communication technologies. During their interviews both of the female older adults Vera and Linda talked about their lack of literacy. Interestingly, some of the middle adults also talked about a lack of digital

literacy. Simon, for instance, described a lack of skill in relation to particular forms of technology, as did Joanne. Alice, on the other hand, was quite frank about her lack of digital skills and described how she proactively sought people to assist her. The reflections of the middle adults are considered in 7.4.2.

7.4.1. Older adults reflections on their own lack of digital media literacy

The two female older adults Vera and Linda shared their own perspectives their lack of technological skill. Vera experienced difficulty remembering the process of using technology and talked about it in terms of ‘missing this link’, while Linda self excluded because she had ‘other interests’.

Vera does not accept that she was ‘missing this link’ with technology. If her son John was not so patient it is possible that Vera may have self excluded and discontinued her use of technology:

“I don’t understand how you know all this. Why don’t I know it all? I cannot pick it up. As John has explained to me, and he’s right, he says ‘You don’t retain anything, do you?’, and I said no. About technology, no I don’t retain anything. He tells me the same thing over, and over, and over again. I ask the same stupid questions to him over and over, and he tells me the same answer, and yet it’s like every day I have no recollection of the previous day. About technology. I can remember so many other things, but talk to me about computers and you’ve just lost me. I just don’t understand how I’m missing this link.”

Vera’s reflections were not unusual among older adults. Her lack of retention was experienced by others who felt that if they did not use the Internet frequently then it was ‘no use going back to it a week later’ as they would have forgotten too much (Palmer, 2011, p. 16). Vera was fortunate in that her son John provided her with educational assistance as well as access. Although her lack of understanding could have affected her confidence around technology, her son’s support ensured that she kept using digital technology. For many older adults barriers such as a lack of

knowledge about the terminology surrounding technology, as well as how to purchase and use it, made the process confusing and engendered a lack of confidence (Palmer, 2011, p. 20).

Linda self excluded but not because of an inability to use technology. Rather she had 'other interests'. Linda was confident in her ability to pick up the computer skills she lacked if she needed to. Like some other married women, she usually deferred use to her husband, as previous studies have also found (Gray, 1995; Haddon, 1999; Palmer, 2011). Linda noted her self exclusion and described it as a conscious decision:

“Even washing machines and everything now; there's far more choices on them than ever there was. Everything that is technology has got more buttons and dials on; you can set it for this, this, this, and this. So unless you're using it all the time, it's different. For us, as a couple, we tried a couple, with all the interest in all of that, it is different for me, because I have other interests. So I leave him to do; so he goes off to that and I'll go off and do my things. As I said, there's no need for me to go back and do it all again, but I think I would be okay at picking up things on the computer for all the things I want to do if I just took the time; stopped being so lazy about it and sat down and did it; it wouldn't be a problem.”

It is clear that Linda made a link between domestic technologies such as washing machines, dryers and other technologies that are deemed to be 'female' (Cowan, 1987), and communication technologies. She also clearly identified herself as the person most likely to surrender her opportunities for digital literacy in order to fulfil other familial obligations. David and Linda coped as a couple with digital technologies by splitting who used what, which helped them to retain knowledge about individual technologies. It was unusual for couples to use the Internet together as previous studies have also noted (Haddon, 1999). Typically people use the Internet as individuals unless people they are sharing what they have found with each other (Haddon, 1999).

7.4.2. Middle adults' reflections on their own use of digital technologies

The interviews revealed that some middle adults also struggled with digital literacy. The number of devices and applications that are in use in our daily lives is placing stress on some middle adults to learn and participate more, especially if they were the person in their family who helped their older adult parent(s). The role middle adults play in supporting the older adults is crucial for parents' digital literacy as older generations constantly rely on younger generations for assistance with technology (Bell, 2009, p. 27). It is imperative that younger generations possess greater literacy skills than their parents. As indicated earlier Simon admitted to being "a bit of a laggard in terms of technology" and was "really bad with technology until someone actually shows me how to use it". His lack of digital media literacy extended even to the DVD player:

"I don't know how to work that DVD player or anything like that. I've really got no technology skill whatsoever, but if I can press a few little buttons and things work, then that's fine."

Yet Simon was the person who kept the family connected using digital technology. He made the purchasing decisions and installed software and hardware for his father. This responsibility challenged Simon to learn about technology even though he essentially has no interest:

"It's more like problem solving to me. If I can find a technology that's going to make me more time efficient, cost efficient, easier to do things then I'm going to use it in terms of technology."

Other middle adults such as Joanne embrace new opportunities when they arose:

"I actually did Facebook the other day. I'm going to become part of the world. There wasn't anybody on there I could find that I knew, but I stuck myself on there anyway. I found an old photo of Alex and I in Queensland

about two years ago, so I put that on there. So I'm on Facebook, that was fun. What else have I done? Not much else. I just run out of time, but I do want to go online and do all that sort of stuff."

For Joanne the opportunities to reconnect socially using Facebook were worth the effort required to join, even if at that point in time she could find no one to communicate with. Joanne was an active smartphone user and owned her own laptop, but she did not rate herself as an experienced user of technology. As a self-employed mother, Joanne - like other middle adults - found it difficult to find the time to improve her literacy. Parents, especially mothers often struggle to find time to use technology because of the domestic responsibilities of children and households, as Haddon has also noted (Haddon, 1999, p. 4). This finding agrees with earlier studies on the use of media technologies such as the VCR (Gray, 1995). Women are also likely to feel guilty about spending time improving their digital literacy (Haddon, 1999, p. 5).

In section 7.3.2 peer-to-peer learning was discussed as a positive occurrence as it fostered learning in a safe environment. Rather than learning how to perform all the new tasks herself, which is confronting for new users, middle adult Alice said she relied on another peer to perform a task for. Alice assessed and prioritised the tasks she needed to perform and learn, and she delegated some tasks to others whom she would ask for assistance. Specifically, Alice prioritised between how to program numbers into the speed dial and purchasing credit. As it was hard to learn all the new aspects of technology at once Alice adopted a step-by-step approach to improve her digital literacy:

"I was going to dancing that night and I had this idea, so I took them to my dance class with me and I asked my dance teacher, who I knew was a woman well versed in the art of mobile phoning, to program in the number of each other phone into each one. She actually programmed them on to a speed dial number...Then I had to overcome the getting credit thing. I went and bought the credit and then I had to overcome the fear of using the mobile

phone, or trying to use it, to put the credit on and all the fun. That wasn't easy because I got quite stressed over that."

Alice identified her own fear at adopting a new technology, and other studies have highlighted that overcoming the fear of all the new tasks associated with digital technologies is common among the generations (Haddon, 2000; Palmer, 2011).

7.5. Task assistance: middle adults assisting older adults with technology

The interviews revealed that middle adults assist older adults with a wide range of tasks associated with technology. In this study, it appeared that the negotiations for these tasks occurred as part of the normal parent - child relationship, a finding also reported by Bell in her South Australian study. As in this study, Bell also found a high reliance on a younger generation for formal and tacit technical support (Bell, 2009, p. 27). The types of tasks conducted by middle adults varied across the families in this study and depended solely on the particular skill lacked by the older adult.

Sometimes the tasks were relatively simple and reflected the day-to-day tasks that we all undertake as part of our daily lives. George for instance described on how his mother sometimes asked him to perform tasks for her in Excel:

"She can, sort of, put the financial figures into an Excel spreadsheet, sometimes. Sometimes she says, 'I've got these things, I need them in an Excel spreadsheet.' So she sends them to me and I put them into the Excel spreadsheet for her and send it back to her."

At other times George's mother has asked for more complicated tasks to be undertaken on her behalf:

"The one thing she just had me do recently, she had all of these old photographs of about six generations of the family, so she wanted me to put them into a montage with all of them which I did. It took forever because I had to scan all the photographs and merge them in and blend them in, but it

came out looking really good in the end. I sent her a digital file of that and she's really happy with that. So I've now got to sort myself and arrange for some reprints to be printed out so I can send those to her."

Photographic tasks as distinct from the photographs themselves were generally the responsibility of the women in the family and formed part of their domestic responsibilities. Rose, in her study of digital photography contends:

"I want to make explicit: that on the basis of my study and other, anecdotal, evidence, it is women, and only women, who undertake this family photography work. While both mums and dads take photographs, it is rare for a man to frame one and unheard of for him to sort, display or send them" (2003, p.8).

George's mother delegated a digital photographic task to George because she had learned that he had the appropriate skills to perform the task, but her decision could also be viewed in gender terms. From a gender perspective George's mother delegated the task because, as discussed earlier, in many families men were the ones presumed to have the knowledge and technical skills (and in this case equipment) and George's mother was in a sense deferring rather than learning how to do the task herself (Gray, 1995; Haddon, 1999).

John's mother Vera regularly asked for assistance with computer-related tasks, but she also asked for help with other media technologies such as the VCR. Gray has noted that the VCR is a media technology that is traditionally controlled by the men of the household (1995). Even though Vera had lived by herself for some time, she was still unable to use the VCR with confidence. John recognised his mother's need for written instructions and provided Vera with detailed instructions on how to perform a task or how operate equipment:

"I've got a whole host of questions that I ask him, numerous things crop up that I don't know the answer to, and I can ask other people I know, everyone

is very patient, but it's better that I don't. It's easier to ask John, and that way it's in writing. I'd love to know how he does it, in Excel for instance. Whenever he replies to one of my questions, he'll give me a visual reply with the icons and the Excel headings, he'll reply with that information in the email, if you know what I mean."

Both Vera and John recognised Vera's problem with technology and their solution was to supply her with instructions in writing in order for her to have some thing to refer to with confidence. It was apparent in Vera's interview that she relied heavily on her son John for assistance with all her domestic technologies and with many day-to-day tasks. Unlike many older adults who have no one to help them with their lack of understanding (Palmer, 2011), Vera was well supported by her son.

7.6. Domestic networking

Providing access to technology is only part of the equation when it comes to increasing digital media literacy and empowering older adults. Access and education are very important, but so too is domestic networking. Domestic networking refers to the setup and networking of computers, their applications and associated peripheral devices. This process is not limited to the examples throughout this chapter but also extends into more sophisticated domestic arrangements such as WiFi within the home and syncing devices for the exchange of content. Throughout this chapter are examples of middle adults assisting their older adult parents by providing domestic networking services as part of the child-parent bond. Yet, as indicated early in the chapter, the multitude of devices, accessories and telecommunications plans for Internet connection are complicating digital media literacy by extending beyond simply one device to multiple devices for individual rather than communal use. This situation impacts on the individual by placing pressure on their individual abilities to use technology and to be digitally literate in a much more challenging way that it was in an era of communal use.

Using digital technology requires a greater understanding of how technology works, expanding the concept of a 'participation gap' and digital media literacy beyond

‘tooling up’ (ACMA, 2009, p. 1) and towards knowing how to ask for help when things become technically difficult and beyond the literacy level of the individual. Many older adults find the technical side of digital technologies very confronting as they do not understand the language or jargon associated with its use when dealing with technical specialists, or even family and friends (Palmer, 2011, p. 38). As a result purchasing decisions are often affected by technical fear and lack of confidence. Older adults are more likely to purchase a device or service if they know a family or friend has the product, or knows how to use it (Haddon, 1999, p. 3; Millward, 2003).

Middle adult Andrea would like her parents to upgrade their Internet connection from dial-up to broadband but the upgrade is a challenge because of the physical distance between them:

“They're still on dial up I think. It's not very good in terms of the connection but it works. So I don't know whether, eventually, we can convince them that they might want to upgrade their connection, but I don't know.”

For older adults without children, or with geographically remote children, domestic networking is more difficult. There are examples in this chapter such as George and his mother who managed her domestic networking requirements at a distance and annually when one or the other visited. Their geographic remoteness from each other affected her purchasing decisions – or in this case, George’s. George described how the choice of camera for his mother was dependent on three things – the weather, simplicity of operation and memory capacity:

“I got her that one because it’s weatherproof...it’s weatherproof down to about twenty metres. I got her that and it saves the images as jpg anyway. There’s no raw format or anything like that. It’s nice and simple. ... When I bought it at the time, it was the largest SD card they had going which was a four-gigabyte one. The idea being that it would hold about 2000 photographs.”

George wanted the flexibility of the storage capacity because he knew that his mother was not likely to download the images onto her computer, and that it would be his responsibility when they saw each other next to perform such a task for her.

“It really means that she shouldn’t have to worry about deleting photographs or doing any of the difficult stuff because no doubt she’ll come back over here and the first thing she’ll say to me is, I’ve got all these photographs on here.”

Middle adult Beth also manages her aunts domestic networking at a distance by organising for technical assistance to be provided by her husband James and Bob, her aunt’s neighbour. James has obviously developed a method of communicating with his wife’s aunt about technology in a way that she does not find difficult or confronting:

“Then the next challenge was to get my aunt onto the Skype. Now this is really funny. I’m not patient with things like that, and as you know, I’m okay, I’m adequate, but I’m certainly not good enough to help someone on the other side of the world install things, and re-jig their system. So what James did was he talked my aunt through the whole thing on the phone. He rang her, on her landline, had her set up the computer and have it all there, and then he’d say ‘Do you see a little box’, and I’m listening to this thinking ‘Oh my God, I could never do that, even if I knew how, I would be so frustrated’. And he talked her through, the only thing she didn’t have was a camera. She has a neighbour in her building who is very helpful, a fellow, and I have his email in case I’ve needed to find out what’s happening and she’s sick or whatever, I always email Bob. I just emailed Bob and said ‘I need you to go either with my aunt, or go and get her one of these little cameras’, because he’d actually helped her set up her computer as well you see. And he went off and we had a few dramas about the camera working and stuff, then it’s perfect, yeah. So for my aunt as well, it’s been a real life line.”

Palmer recommends personal visits for older adults to assist them with digital technology (2011, p. 38) since most older adults find it difficult to understand what to do over the phone. However James, obviously found an effective way of communicating over the phone with his wife's elderly aunt. Nevertheless for some older adults domestic networking needs to be conducted by themselves, or someone outside the family, although or in some cases older adults choose not to have digital technologies such as a computer at home and rely on public access (MMV, 2004; Palmer, 2011).

Using his mother's passwords, George used a remote connection from Australia to connect his mother's computer in the UK to the Internet and later Skype. George's confidence that their new method of communication would work was reflected in his positive turn of phrase, and in his proud remark 'I've got her set up properly'.

"It's so much easier with Skype because you fire up your computer, you turn on your Skype and it will tell you whether there's someone there or not. It's got the little green tick next to it. If my mother's forgotten to turn the computer on, I know she's not at the other end. I've got her set up properly. She's got the webcam and she's also got the Skype phone. To her it's like we're making a phone conversation. She doesn't have to actually do anything other than pick up the phone, which is what she used to do, because she's definitely of that generation where the technology is a bit beyond her."

George saw these tasks as part of his role of providing not only technology access but also ongoing maintenance and assistance for his mother. Unable or unwilling to ask for assistance elsewhere his mother relied on George as much as possible for her domestic networking requirements even though he lived overseas. George's mother visited or George himself visited once a year which gave George the opportunity to update or supply her with any new technologies she may need.

7.7. Conclusion

This chapter has demonstrated the different digital media literacies that occur among individual family members. The key result is that older people need assistance not only with the decision-making processes in relation to consuming technology but with maintaining their technologies as well (Haddon, 2000; Palmer, 2011). Consumption practices were discussed and established in the earlier chapters of this thesis. This chapter asked the question ‘Who do you ask for help with technology?’ and the responses were limited to family. Asking whom individual family members ask for help within their extended family and how family members support and empower each other is a novel question in communications research.

Domestication of technology is not simply about being able to communicate with it but also about it. Silverstone and the other Brunel researchers who proposed the theory of domestication were interested not only in how media objects are consumed but also how people appropriated and incorporated them into their environment. This chapter discussed how the middle adults and older adults were communicating *about* their new technologies in order for domestication to occur.

Another result worth reflecting on is that in order to communicate in families with individual devices, digital media literacy is necessary for everyone in the family. The predicted multi-set television household of Morely and Silverstone’s era has blossomed from television sets to include most fixed and communal technologies such as the telephone (1990). We are now in Gergen’s era of progressive privatisation, where all family members possess personal communication technologies and few communal ones (2002). We are also in Schroeder’s era of multimodal connection, where people use more than one device to stay connected (2010). We now possess multiple individual (and not communal) devices in order to stay connected in multiple ways. Therefore digital media literacy is imperative at all lifestages and among all family members in order for them to be able to effectively communicate with each other and the wider world. Empowering each other in this way makes individual family members feel included rather than excluded.

The tensions observed in this study between the middle adults and their older adult generally resulted in proactive measures on the part of the middle adults. Keen to get their parents using digital communication technologies, it can be argued that they found positive methods of engaging their parents in technology by assisting with the adoption and fostering empowerment through peer-based learning where possible. Some middle adults also demonstrated empathy with their parents, as seen in John's statement at the opening of this chapter about his mother's shorthand skills. This empathy encouraged John to see past his mother's inability to conceptualise about technology and to assist her where possible with instructions and 'how to' graphics when she asked for help.

Overall, the results of the unstructured interviews discussed in this chapter suggest that positive encouragement and support for older adult adoption of digital communication technologies by their middle adult children is a necessary component of older adult adoption. When middle adult children offer to and do provide support that includes the purchase and maintenance of technologies, it appears to be a more successful approach as a way of introducing the technology and the changes it will bring to their lives. Further, when middle adult children encourage peer-based learning to supplement their initial assistance, older adults respond more positively to adoption.

A final important point that arose in this chapter was that of a level of domestication beyond the four stages offered by domestication theory. For instance, when older adults David and Linda used a combination of personal communication technologies and the Internet to communicate with David's brother overseas (7.3.3), this indicated a superior level of domestication. It is a level that demonstrates a high level of understanding or at least a positive approach to possibility. Their use of multiple technologies and applications indicated that they had fully domesticated these devices to a level of understanding that gave them sufficient confidence to explore different routes to connect and communicate with their family. David and Linda were no longer content to only maintain contact through their traditional

contact methods and had begun to explore alternative methods. These new methods were challenging and require multiple device connections, but even as older adults, David and Linda's experience shows that it can be done.

This chapter and previous ones have explored the adoption and practices of digital technologies such as the Internet and mobile phone. However, technology constantly changes and new applications such as Skype have emerged. As a voice technology, how are the interviewees and their families adopting the 'new' digital communication technology of Skype? The next chapter discusses how Skype is being domesticated among the interviewed families.

CHAPTER 8

Skype: The Latest Familial Application

“You are so close, but still so far...You can see them, and they are just there, but you can’t touch them. So in a way it hurts a bit more than when you are just talking to them on the phone... in a way it’s more poignant because you realise you can’t get closer than that” (Amanda).

8.0. Introduction

Previous chapters in this thesis have discussed the roles of digital technologies such as the Internet and mobile telephone in the changing familial communication environment of connected space. The results of the online questionnaire and face-to-face in-depth interviews have identified that ‘voice’ is the preferred method of communication between family members when face-to-face visits are not possible. This chapter investigates the final digital technology to be discussed in this thesis – Skype. Skype is a relatively new application that enables video calling and chatting and this chapter explores the ways in which the interview families are domesticating Skype within their lives and what issues arise as part of the domestication process.

This chapter focuses primarily on the reflections of the six interview families who use Skype (4.8). It discusses the Skype results drawn from the interviews held with middle adults George, Amanda, Simon, Beth, Andrea, John and older adult Vera. Three interviewees did not use Skype: middle adult Joanne and the two older adults David and Linda. The domestication of Skype within interviewees’ lives was such that the interviewees spoke of ‘skyping’ their family or having ‘skyped’ someone. The need to connect with remote and extended family members was strong, and the low-cost ISP independent web based service Skype enables increased frequency of contact and video calls that foster more frequent calling, and calls of longer duration. For most of these families, Skype was not the only means of communication, but rather just one method of mediated communication in a complex layer that had evolved over time (Wilding, 2006). Families used a range of methods to

communicate - letters, email, chat, telephone and face-to-face, each new method adding to the complex layer of communication (Dare, 2008; Rakow, 1992; Wilding, 2006).

The interviewees discussed in this chapter were a mix of people who had moved beyond the initial stages of the domestication framework - appropriation, objectification, incorporation and conversion - in relation to Skype. Some demonstrated new ways of using the service that were more socially inclusive of their remote family members. Others were slower to adopt new practices, preferring a more traditional approach to Skype as another telephony service with video. The study results also revealed (8.4) that Skype like other telephony products, created greater intimacy between family members while at the same time reduced it through the experience of absent presence. Skype fostered immediacy and emotional labour in forms such as remote mothering (8.2) and provided hope for continuing relationships despite distance (8.3.3). While issues such as intimacy, absent presence (8.5), and call frequency were revealed through the traditional lens with which we view telephony, emerging issues for discussion - such as availability (8.4), interruptibility (8.5), and social presence (8.3.1) - are also explored in this chapter.

Any resistance by the interviewees to using Skype seemed to result from poor quality in transmission that sometimes occurred, which limited the conversation to either voice or video. The resistance was short lived when additional benefits - such as being able to see each other, adding 'something to our communications' (George) and feeling 'a little bit closer' (Simon) - were experienced.

The final section of the chapter (8.5), 'Emerging differences between telephone calls and video-chat' focuses on the innovative use of Skype by the experienced users who moved it beyond a video version of the weekly call home.

8.1. Skype

Founded in 2003 Skype is a peer-to-peer ISP independent web based branded

telephony service (ACMA, 2008b). It enables local, long distance, and international calls to be made for low cost over the Internet with flexibility, using computers, landline phones, or mobile phones. Created with ingenuity by the software engineers behind the peer-to-peer service Kazaa, Skype was their second project with a simple ambition to allow end users to make calls over the Internet (Thomann, 2006). Since its launch, Skype has been successful internationally with Skype users making '207 billion minutes of voice and video calls in 2010, approximately 42% of which was video' (Skype.com, 2011). Skype now offers its users facilities for instant messaging, talking, video calling, group video calling, screen sharing, sending files, and texting (Skype.com, 2011).

In 2007 when the interviews for this study were conducted, Skype was in its infancy of adoption within Australian families, as only 10% of Australians used Voice over Internet Protocol (VoIP) (ACMA, 2010, p. 13). That figure has since risen quite steadily to 16% in 2010 (ACMA, 2010, p. 13). Unlike other services such as Voice over Broadband (VoBB) that involve fees and charges to users, the ISP-independent model bypasses ISPs and usually calls are made at no cost (ACMA, 2008b). ACMA states in their report *The Australian VoIP Market* that they assume the increasing rate of VoIP take up is related to its low cost (ACMA, 2008b; ACMA, 2009a).

The higher quality Voice over broadband (VoBB) is available as part of a telecommunications plan, but none of the interviewees was a subscriber. VoBB generally involves additional charges to the end user, and is normally bundled in with a home broadband connection through an ISP. In terms of technology, simply phrased, VoBB is different from Internet Telephony in that 'voice traffic is transmitted over managed and proprietary networks' rather than over the public Internet (Graham and Ure, 2005). In the case of an Australian ISP, such as iinet, there is a monthly connection fee: a separate per-minute charge to mobiles: and international calls, local, and national calls have a set untimed fee (iinet, 2009). Only if the calls are made to another iinet customer are the calls free (iinet, 2009).

Typically people use their computers to connect with each other through Skype and this was the case with the interviewees and online questionnaire participants. Thirty-seven percent of the online questionnaire participants stated that they used the Internet to communicate with family. Of that group 14.2% participated in family VoIP chats. This is comparable with Australia-wide statistics from 2007. In Australia, only 14% of all VoIP subscribers make video calls compared with the 46% of subscribers who use it to keep connected with family and friends using telephony. This low rate of take-up supports the contention that the current use of VoIP is more about saving money than video calling (ACMA, 2010). However, the rationale for using Skype within the interview families was that it closely replicated in many cases the traditional weekly phone call home at a minimal cost with the added advantage in some cases of video through the use of webcams.

The research reveals that the branded service site, Skype, was adopted by the participant families primarily as a way of keeping in touch with family members who had moved interstate or overseas. All study participants used Skype as a computer-based means of communicating. Skype does offer other possibilities of connection through computer to landline phones and mobiles but none of the families in this study used these methods as a regular way of communicating. Unlike other telephony technologies such as the landline phone or mobile phones, Skype as a web based peer-to-peer service is not offered as part of a telecommunications plan. ISP independent web based applications like Skype enable users to connect to each other through their application. Keeping in contact by talking with family members who are interstate or overseas is expensive using fixed-line or mobile services. Skype calls placed to phones outside of the web based computer network, known as SkypeOut, also incur charges. Fees for SkypeOut calls to fixed lines or mobile phones can be paid through a subscription based or pay-as-you-go credit system (Skype, 2011). However, for the families involved, a fee-based system would be the equivalent of calling directly on a fixed-line, or mobile phone.

As VoIP is yet to reach mainstream levels, there is little published research into its adoption from an Australian end user perspective. This is particularly the case in

relation to research with families and their use of digital technology. However, research has been carried out in an Australian context into VoIP use in regional businesses, where 30% of those who adopted broadband use VoIP as 'a relatively high proportion of their calls are non-local' (Molloy et al., 2008, p. 6).

However, investigations into the familial use of VoIP and video calls have been conducted by international HCI researchers. Two recent publications from HCI researchers investigate the ways in which families are connecting using video chat. One group of HCI researchers discovered useful tools for signalling participants' availability to chat such as the 'knock' and 'handwriting on screen' (Judge, Neustaedter and Kurtz, 2010). Families in these studies also valued video chat as a group activity (Ames et al., 2010a). Along with defining the benefits of video for the different generations of children, parent, and grandparent (Ames et al., 2010a; 2010b), children and grandparents were seen to receive the greatest benefit from video calls (Ames et al., 2010a; 2010b; Judges, Neustaedter and Kurtz, 2010). Ames et al. identified that in order to make video chat possible within the context of families work both technical and social needs to be undertaken (2010b). This is consistent with the results of this thesis. As identified in Chapters 6 and 7, middle adults and older adults negotiated both technical and social tasks to be undertaken in relation to the domestication of communication technologies.

8.2. The weekly call home

Families have a history of arranging times to talk with each other using the telephone (Dare, 2008; Rakow 1992; Wilding, 2006), and arranging these talk times continues with Skype (Rickard, 2009). Telephony talk time is often gendered, with men perceiving that women indulge in social conversation rather than phoning with a purpose (Fischer, 1988; Rakow, 1992; Wajcman et al., 2008). Yet the weekly call home can be seen more as a way of keeping connected with extended family members, particularly those who have moved away from home, and with older family members who rely on the telephone as their main form of social contact (Rakow, 1992). Telephone 'visits' are especially common among the elderly and the predominantly housebound such as women working at home caring for their family

(Rakow, 1992). The term 'visit' coined by the people of 'Prospect', the town where Rakow based her research, is an appropriate term that more accurately describes what takes place. People are not simply phoning in a perfunctory way to perform a task, but are visiting with family in perhaps the only way possible. Distance and finances may prohibit frequent in-person visits. Instead, they phone their extended and remote family members to exchange information about their everyday lives and those of other family members, just as if they were visiting in person. The 'visiting' perspective on the weekly call home is an important perspective when used in conjunction with video, and it is discussed again later in this chapter in relation to availability and online status indicators (8.5) and absent presence (8.4).

For some of the interview families, the use of Skype had replaced the weekly phone call home. Amanda stated in her interview that she held a scheduled half-hour video call with her family once a week and George skyped with his mother most Sundays. Most of the families interviewed reported a change in their telephony habits with the adoption of Skype. They identified that calls using Skype were made more frequently (perhaps several times a week rather than a single call), and because of their low cost they were usually longer in duration than telephone calls. This fact was supported in findings by ACMA (2008b, p. 12) and earlier research by Hiltz et al. (1986), who found that communication quantity was higher in face-to-face groups than in computer-mediated groups (as cited in Andres, 2002, p. 41). Arranging a set time once a week circumvented restraints posed by everyday commitments such as work, and different time zones.

The weekly call between middle adult George and his mother, who lives overseas, for example, had been replaced by Skype calls.

"With my mother, now she's set up and the Skype is working properly, so every Sunday rather than making a phone call we Skype each other."

For middle adult Amanda who had two children living overseas, it was more difficult to arrange the weekly Skype call as it required juggling three different time zones

and individual commitments in order for them all to connect at the same time. Sometimes Amanda settled for speaking with just one of her children at a time:

“The only thing about Skype is, it’s ok for my daughter, she’s ringing, we’re talking every Sunday evening at 7 o’clock my time, in Britain it’s about 9 o’clock in the morning, but my son is in Canada which is about a 15 hour difference. And he, it’s very difficult to pin him down because he plays sport several times a week, and they often go away on the weekends. So for me to talk to him in his evening, which is the only time he’s home, it has to be my midday which is tricky if I’m working. I don’t work everyday so we’re lucky we caught up last Friday, and that was his evening, but then it’s rare that he’s home in the evening, so that’s a bit of a pity.”

Both Amanda and George spend roughly the same amount of time for each weekly Skype call as they did for their telephony calls. Simon, however, had increased the frequency and duration of his calls. Skype extended Simon’s talk time and increased the frequency of communication with family when he was working overseas:

“Instead of having a normal telephone conversation for ten minutes I can now chat for an hour at least once or twice a week with them.”

For George, Skype had not increased the frequency of contact - he and his mother still Skyped once a week on a Sunday – but the talk time had been extended.

“It doesn’t mean that we contact each other any more frequently, but now we tend to contact each other for longer. ... Now being able to Skype to the UK, not having to actually pay anything means that we tend to speak for probably twice as long every week. Were there to be something that happened here or something happened over there then we wouldn’t have any hesitation about getting in contact outside of our normal times because it’s cheap.”

For middle adult Beth, the length and frequency of calls to her aunt were extended because of Skype. However her use of Skype was more ubiquitous than either Simon or George as she used it without restraint, while Simon and George still emulated the weekly call home. Beth stated “We could easily be on Skype for hours ... Skype has really changed how often we communicate and the depth of communication.”

For Beth, Skype was a cheaper communication tool than the telephone. Calling overseas using the telephone can be prohibitive, but using a web-based service such as Skype, the only charges that apply are for Internet connection time. Beth indicated during her interview that “if it (Skype) costs money we would probably use it less”. This radical change in practice is consistent with any new technology, particularly if the change in practice is related to cost (Haddon and Vincent, 2004). Haddon and Vincent explored the impact of the domestication of the mobile phone from within the context of ‘a more complex communications repertoire’ (Haddon and Vincent, 2004, p. 231). They revealed that families develop strategies to better manage communication between parents and children in relation to the type of communications technology being used at particular points in time if there was a cost benefit to the family (Haddon and Vincent, 2004, p. 234).

The weekly call home is part of the practice of caregiving, as discussed earlier in Chapter 3 (3.2.2.2.a). In this study, caregiving occurred between adult children and their parents such as between Beth and her aunt, Simon and his father, and George and his mother. Caregiving also occurred across the generations when middle adults act as caregivers to their children and their parents.

For the Skype users in this study, caregiving took the form of checking on each other through the use of Skype messaging, voice and video calls.

“And it’s reassuring for me as well, because when she’s been ill or unwell I can use that to just keep tabs on her without having to be on the phone. I can just send her little messages and she can send me messages back and I know that things are functioning okay.”

In contrast, Amanda, whose adult children both live overseas, used Skype as well as the telephone to keep in touch with her children. For Amanda there was a lot of work negotiating the availability of her children, for participation in family Skype chats as they lived on different continents and in different time zones.

8.3. Keeping families connected: presence and intimacy

As a telephony product, Skype similarly evokes the issues of intimacy and presence commonly found in mobile phone use. In the first section positive connecting factors are discussed in relation to social presence (8.3.1.), intimacy (8.3.2.) and establishing stronger relationships (8.3.3.). The following section will focus on the disconnecting factors experienced by interviewees when using Skype; absent presence, interruptibility and multi-tasking (8.4.).

8.3.1. Social presence

The added extra of visuals when using video with Skype increases the sense of intimacy through greater 'social presence'. Social presence is measured in socio-emotional cues and is defined as 'the degree of awareness of another person in an interaction and the consequent appreciation of an interpersonal relationship' (Tu and McIsaac 2002, p. 132–133). Some forms of communication such as email are 'lean' in socio-emotional cues and others such as video are 'rich' in the level of information that is transmitted (Andres, 2002, p. 41). Email relies on text to foster communication between writers, whereas video as the richest media enables more complex interactions to occur between Skype callers using combinations of voice and visuals. The media richness of video VoIP reaches beyond aspects of mobile communication presence and enables the caller to participate in an encounter that closely emulates face-to-face conversations (Kraut and Fish, 1995, p. 703). Callers' facial expressions, direction of gaze, gestures, posture, dress, nonverbal cues, and vocal cues are all factors that contribute to a degree of social presence among the Skype participants (Tu and McIsaac, 2002, p. 133; Andres, 2002, p. 40).

Interviewees George, Amanda, and Beth all reported feeling a greater sense of presence when using video calls as they were able to see their extended family members, and the visual cues offered during the call provide them with reassurance in the manner of 'social presence' described by Tu and McIsaac (2002).

8.3.2. Intimacy

The richness of video and the easy access of video VoIP through branded service sites such as Skype is opening up a new communication platform for families who are geographically separated. Skype users are able to communicate with other family members 'face-to-face' for no additional cost beyond that of their Internet connection, extending their talk time and frequency of contact.

All seven interviewees used webcams for video chats with their family members, believing video added something to the experience of telephony. Interviewees described the video component on Skype as contributing to increasing levels of closeness and intimacy.

"I think that Skype has added something to our communications. It's not that we communicate any more frequently, but there's more depth and more value to the communications when we do talk" (George).

"The advantage of webcam is it makes you feel a little bit closer to people when you're speaking to them on the webcam" (Simon).

"I think in our family that the Skype has really changed how often we communicate, and the depth of the communication" (Beth).

For George who said it was the first time in several years that he had 'seen' his brother, talking to his brother using video on Skype was:

“almost like it is a face-to-face conversation. You can see the expression on their faces that you might not always get coming through just a telephone conversation.”

For middle adult Amanda, video calls to her two adult children were particularly poignant. While video calls offered a greater sense of social presence, an unforeseen element in Amanda’s conversations with her children was the inability of video calls to provide that additional element of face-to-face conversation: touch. Amanda, in her fifties and single mother to adult children now living overseas, stated:

“You are so close, but still so far...You can see them, and they are just there, but you can’t touch them. So in a way it hurts a bit more than when you are just talking to them on the phone... in a way its more poignant because you realise you can’t get closer than that.”

Voice only communication does not carry the additional richness of video. Nor does it contain the inherent socio-emotional cues experienced in physical presence – for example, nonverbal cues and back-channeling cues such as utterances (Andres, 2002, p. 41). The difference in media richness experienced by Skype users was clearly articulated by middle adult Beth when talking about different levels of contact with her daughter during three trips away from home. The synchronicity of video calls drew all the ‘rich’ elements of the media together and provided immediacy and intimacy to the callers. This was no more apparent than when Beth’s daughter had an accident during one of her school trips away.

“On the first trip we didn’t use the Skype as much, and she didn’t have a camera ...it was voice (Skype) and I was just reassured to hear her and she was okay.”

“On the second trip when she had her accident that was really horrible because then we were only relying on her mobile.”

In this instance, being able to see her daughter through the use of video would have provided Beth with some level of reassurance. Relying on voice only meant that Beth was unable to see any of the socio-emotional cues such as body language and the visual representation of her daughter when injured.

Unlike the other forms of digital communication - text, and voice Skype video calls enable family members to visually check on each other. Video calls have the added advantage of socio-emotional cues such as voice and personal expression (Tu and McIsaac, 2002). These cues add further depth to the communication practice. The social presence offered by video provides family members with a presence that is as close to face-to-face communication as possible. The visuals provided by webcam using Skype also enables family members to keep a watch on their remote family from a distance (Judge, Neustaedter, and Kurtz, 2010) and enable caregiving (Rakow, 1992).

Video calls raise the level of talk interaction to much the same as face-to-face conversation with its inherent visual and audio cues. This visual change makes social presence possible and provides a heightened sense of intimacy and immediacy as yet unobtainable through other communication technology. In earlier studies in relation to video telephony within a business environment, voice was 'adequate for routine information exchanges', and it was only when 'tasks became more socially sensitive or intellectually difficult' (Kraut and Fish, 1995, p. 704) that video telephones were preferred. Voice exchanges in families can be reassuring when there is no video connection and can also contain routine information. Video, however, can reassure parents in a different way as it enables the possibility of seeing for oneself particularly if the connection is live. To reassure herself about the condition of the premises at which her daughter was staying during a school trip overseas, Beth asked her daughter to show her:

"I said show me the room so she took the mini-cam and did a slow pan."

Later Beth admitted that she was less nervous about her daughter travelling again to that location, because, “even though I hadn’t physically been there I felt I knew it more. It wasn’t so unknown.”

This visual element of being able to see the living arrangements made Beth more comfortable emotionally in allowing her daughter to travel again to and from that location. Beth was able to enact her mothering remotely through the use of video, as the visuals provided by a webcam provided information that was not available through text or voice, and possibly not provided by her teenage daughter when asked. The combination of visual and voice in a video call was clearly the most reassuring for Beth:

“The second time because she went to the same place where she had been, and even though I hadn’t physically been there I felt I knew it more it wasn’t so unknown. The first time we were both nervous about it. The second time ...okay she’s a long way away but the second time we made her take the camera and we could see her so I knew if she was really tired or I could tell by looking at her face if she was trying to be brave and I could assess for myself.”

For some participants sharing immediate moments in this way increased the sense of intimacy shared and gave the feeling of being more involved in the details of their families’ everyday lives. Video VoIP also enables immediacy, as video conversations enable the sharing of small moments that would otherwise rely on retelling by the person who witnesses the event, rather than the sharing of the viewing by the other.

8.3.3. Establishing stronger relationships

In Australian homes 98% of families have a computer and 76% using broadband Internet (ACMA, 2008c, p. 6) so there is little need for families to purchase new equipment beyond perhaps a webcam in order to use video VoIP. The combination of free software, free calls and few additional hardware expenses increases the attraction of peer-to-peer services. Skype software is easily downloaded from the

web and installed onto the computer. The choice of an ISP-independent model by all the participants in this study reflected the ease of operation and installation of web based applications like Skype. The geographic isolation from extended family and lack of technological skill of some family members necessitated an easy-to-use product.

The richness of video, and the easy access of Video VoIP through branded service sites such as Skype, is opening up a new communication platform for families who are geographically separated. Skype users are able to communicate with other family members 'face-to-face' for no additional cost, which extends their talk time and frequency of contact and most importantly establishes and maintains relationships at a distance.

Studies such as those conducted by Ames et al. suggest that sustaining a relationship remotely through the use of videochat is highly possible (2010). For John whose sister and niece lived overseas, Skype has provided an opportunity to see his young niece Jane as she grew. The use of Skype gave him hope that Jane would remember him, and that it would be able to help him develop a relationship in the future:

"With my niece living in Hong Kong we've used Skype a fair bit, not a lot but a fair bit, more for the purpose of me to see the growth in Jane more than anything else. Certainly, I would want that to increase. She's been down here for the last couple of months and it would be good to build up the relationship. We're going to lose that when she goes back to Hong Kong. She's a bit too young now."

"She loves using the computer now; she learns by imitation. She sees mum and dad on their computer and she's intrigued by it. I think in the next year or so it's amazing how quickly she learns, I'm sure that she'll understand that if you look into the camera and she sees me that she'll know who I am; so I'm looking forward to that."

While John was keen to maintain his existing relationship with his young niece using Skype, others were able to use Skype to establish or re-establish contact with extended or remote family members. George took advantage of his mother's Skype connection to get in touch with his brother, who was visiting his mother. As discussed previously George reflected that it was the first time he had 'seen' his brother in three years, demonstrating how video calls are similar to face-to-face visits in providing a greater sense of the person than simply a telephone call. However it is important to consider that much of this is contextual. When discussing the history of telegraphy, Sterne contended that a simple telephone call provides as much 'depth of feeling and communication that was hitherto reserved for face-to-face and written interaction' (2003, p. 153). People are used to being able to treat things they can hear as 'present' more than things they cannot see, touch or taste, and this was also apparent in the interviews conducted for this research, as evidenced by George:

"I don't speak to them very often at all, although a couple of weeks ago it happened that my brother was there and so I Skyped with him. That's definitely the first time I've seen him since 2003/January 2004 and it's probably the first time I've spoken to him. We usually just have a phone call at Christmas."

Group calls of the nature George described were not common among the families interviewed for this study. Most of the Skype calls were one-to-one. Skype group calls are possible as long as someone in the group has a subscription, or a 'day pass' is purchased (Skype, 2011). Group calls were common, however, in the families participating in the San Francisco based videochat project, Family Windows. In this study, HCI researchers investigated how families interacted using open and closed 'windows' over a long period of time (Judge, Neustaedter, and Kurtz, 2010). The 'windows' were computer screens placed in communal living spaces in participants' homes (Ames et al., 2010). The families interviewed in that study 'valued the group nature of videochat', and these calls were often prearranged with multiple family members included (Ames et al., 2010, p. 147). The researchers identified that group

chats were beneficial to families because children could make sense of the calls, as children respond better to video than simply audio calls, and parents were able to reestablish and nourish remote relationships - as could grandparents, who were geographically remote from their grandchildren.

8.4. Disconnecting families: 'absent presence', interruptibility, and multi-tasking.

While there are advantages to using Skype, there are also some factors that could be considered 'disconnecting'. Absent presence, the ability to interrupt, and the potential for multi-tasking during calls are all disconnecting factors. These are not new factors in family communication as they have been present in earlier communication technologies such as the telephone, but it is important that disconnecting factors are included in this discussion as interviewees felt these negative emotions as part of their Skype experience.

'Absent presence' is mainly discussed in the literature as form of experience when someone co-present with another at the same time remove themselves from it. This can take the form of reading a book (Gergen, 2002), listening to an iPod (Walsh, 2009) or walkman (Sterne, 2003) or any other activity that effectively removes the other person from their physical presence. This sense of absent presence arose in the interviews in relation to Skype in two different forms: passive and active exclusion. The first was experienced by older adult Vera who described a perceived absent presence during Skype calls with her daughter and son-in-law. The second was described by middle adults Simon and Beth whose sense of telephone etiquette now considered multi-tasking during Skype calls to be socially acceptable.

Vera experienced absent presence during one Skype call when her daughter who was meant to be talking with her, turned and spoke to her co-present husband, excluding Vera from the conversation. This action left Vera confused as to the

number of participants in the conversation, and how many conversations were being held simultaneously.

“Graham and Lucy will have a conversation with themselves as well as me, and I don’t know whether they’re talking to me or themselves.”

Their actions also left Vera with a sense of being excluded beyond absent presence:

“I’m sure it’s their end, because they’re not all that committed in talking to me only, because they’re too busy and it’s time wasting to actually have a conversation with your mother for ten minutes.”

This feeling of exclusion was so extreme that it has resulted in Vera no longer holding Skype calls with her daughter. Vera became a ‘rejecter’ of Skype technology - that is she has stopped using Skype voluntarily - because of the sense of absent presence (Wyatt, 2003, p. 76).

Talking on the telephone is both ‘work and a skill’ which perhaps Graham and Lucy are yet to master when using video Skype with Vera (Rakow, 1992, p. 42). Like Schegloff, Rakow contends that telephone conversations have a particular structure, one that involves ‘initiating a conversation, making oneself understood in the absence of multiple cues, listening carefully, coordinating turn taking, closing the conversation’ (Rakow, 1992, p. 43). When this structured performance is altered by other actions such as talking between co-present people, whether they are physically co-present or virtually, a sense of absent presence is felt by the third party – in Vera’s case, powerfully.

In contrast, middle adults Beth and Simon expressed appreciation that Skype provided the flexibility to hold conversations with or without the webcam on, giving them the freedom to multi-task when talking with their older adult family members. Unlike Vera who was an excludee, Beth and Simon actively exclude others when making calls by multi-tasking at the same time. By making the decision to hold a

Skype conversation without a webcam casting an image they were free to undertake another action in the belief that the other person was unaffected by their absence so long as it remained invisible to them.

Simon saw Skype calls with family members as an opportunity to multi-task when overseas for work:

“while I'm doing something else ... I can be wandering around making breakfast or whatever and I'll be talking to them at dinnertime here.”

It is questionable whether Simon was an active participant in his Skype call, given he seemed to prefer making calls home while undertaking other tasks. This suggests that a Skype call for Simon is something to be undertaken while doing something else, rather than an action in itself. Rakow reports that in Prospect those who do not indulge in telephone conversations because it is seen as ‘idle talk’ may use the ‘telephone for a purpose’ (1992, p. 52). Perhaps this is how Simon viewed his use of Skype, as a functional way of keeping in touch (Livingstone, 1994). Others in Rakow’s study, primarily women in Prospect, set some household chores aside - such as washing dishes – to do while on the phone so that they did not feel guilty when visiting on the phone (1992, p. 52). Their guilt stemmed from the fact that the men in their lives saw telephone calls as ‘idle talk’, rather than productive contact (Livingstone, 1994; Rakow, 1992, p. 52). However, for Simon, the Skype calls seemed to be a way of continuing a remote presence rather than participating in a co-present activity. Multi-tasking during Skype calls had different connotations for Beth who sometimes participated in a video Skype call and other times multi-tasked without using her webcam.

For Beth and her aunt whose use of Skype was almost ubiquitous in their daily lives their visits had a different approach. Beth was sometimes conflicted about being present during video during calls with her aunt. She wanted to be present to talk with her aunt but she did not want her aunt to know that she was undertaking other tasks at the same time.

“because my aunt can see when I’m online, so she’ll Skype me and say ‘Are you there’, or ‘I’m calling you and can you pick up’. Yeah, then I feel guilty if I don’t pick up, but if I pick up and I’m doing something, if she can see that I’m working through my ‘have to’ papers on my desk, then she might get a bit annoyed that I’m not paying full attention to her conversation.”

Beth is aware of the potential feeling of exclusion that could be felt by her aunt. Her conflict between attending to her work or making a video Skype call with her aunt is a conundrum for others in the workplace. While it may be convenient for her aunt to make a call at that time, it may be less convenient for Beth, placing Beth in the difficult position of choosing to stay on her work task, or beginning a conversation with her aunt. Instant messaging, and contact that is spontaneous through the use of status indicators, is part of an ever-growing number of daily interruptions being experienced by workers, and among family and friends (Avrahami and Hudson, 2006, p. 732), often leading to unproductive results (Baron, 2008, p. 183).

Older adult Vera expressed her frustration at the inability to have a Skype conversation without ‘distractions’, unlike her recollection of telephone conversations. While Beth was conflicted about trying to remain available to her aunt when at times she was clearly unavailable, Vera felt that people who tried to hold telephone conversations while undertaking other activities were distracted, and the conversation was of a lesser quality.

“When you’re having a one-on-one like we are there are distractions, you’re living in the present, it’s more instant, your conversation, whereas on the phone there’s probably not so many distractions, you’ve just got that one person listening to what you’re saying, and you think of different things to speak about, you’re not discussing what you’re actually doing at the present time, because what you’re doing at the present time is talking to the other person.”

In line with experiences by Rakow in Prospect, it seems that Vera used the telephone for 'visiting' and 'companionship' - that is her conversations had a purpose to catch up with someone's news and to impart her own. For Vera, the telephone was not necessarily used as a purpose, but more as an important tool of connection (Rakow, 1992, p. 46). Vera clearly expected that Skype and also video Skype would provide a better level of connection with her geographically distant family.

Beth took a more active stance in relation to Skype and sometimes made a conscious decision about her social presence during Skype calls with her aunt.

"The way we have it worked here, in this house is on my laptop I have the Skype voice, and I have a detachable camera but I can't be bothered putting it on...If I have the camera on she can see that I'm not paying attention, and I can't do other things. If it's important and I need to see her, or she wants to see me, or us, for any reason, then I go upstairs to James's who has one permanently attached to the PC that's there. It's also just that whole thing that I just have to go to the Skype thing and turn it on, and it's all working. Whereas if I have to use it on my laptop I've got to find the camera, I've got to plug it in, and make sure it's sitting in the right spot and all that stuff."

Beth's choice to participate on a computer without using a webcam is not unlike others who choose to remove themselves from an environment where they are constantly interrupted. Beth has chosen to indicate that while she is available to chat because of her close relationship with her aunt she feels pressured into participation (Avrahami and Hudson, 2006, p. 733). Beth unconsciously makes this clear by choosing to engage in conversation without a webcam during these coerced conversations.

8.5. Emerging differences between telephone calls and Skype

8.5.1. Availability and spontaneous contact using 'online status indicators'

The traditional concept of the weekly call home is part of a social ritual within families. Like most families in the study by Rakow it was standard practice within the

interview families to prearrange the next call (1992). In most cases it is the children who phone their parents, possibly because it is expected that they would have greater resources to do so, especially if the parent is elderly (Lohan, 2001; Rakow, 1992).

The social ritual of the weekly phone call may not have altered during the transition to greater adoption of mobile telephones, but the introduction of a telephony product within an online environment opens up other possibilities for arranging contact and rearranging the ritual. While the mobile phone offered greater possibilities for calling home from a fluid location, Skype offers possibilities for not only flexible location changes, but also flexible times too. Time fluidity, made possible at the discretion of the end user, is a significant change in the transition of telephony to Skype. The other significant social change is the use of video. The interviews for this study revealed that along with the use of video some of the families made use of online status indicators for spontaneous visits with family.

Online status indicators (OSI) are present on most social sites such as Facebook, webmail services such as Yahoo, and other branded sites such as Skype. A presence on any of the indicators provides family members with availability awareness – that is that someone they may wish to contact is online. For example, while browsing Facebook, Beth might notice that her aunt is online and make spontaneous contact. Spontaneous contact can be made irrespective of time zones and work commitments if an active presence is indicated using a online status indicator. Status indicators can be altered by people to show various states of presence on their computer profile. With similar options to Skype, Yahoo mail uses smiley emoticons to graphically represent availability. A gold smiley emoticon indicates the person is actively online, the grey emoticon represents ‘offline’ or ‘unavailable to chat’ or ‘invisible’, and the red emoticon means ‘online but busy’ (see Figure 15).

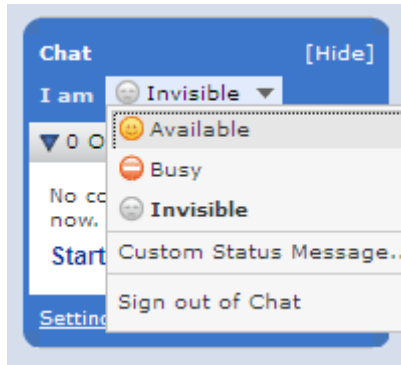


Figure 15: Yahoo Chat OSI

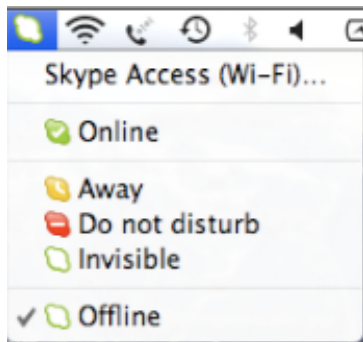


Figure 16: Skype OSI

On Yahoo there is also the option of creating a customised status indicator, where people can write their own message. Showing presence on these indicators makes other people aware when you are online and possibly available to chat using text or voice, leading to more frequent contact. However, while status indicators provide an awareness of presence at a computer, they do not always indicate whether someone is available for communication (Avrahami and Hudson, 2006, p. 732; Baron, 2008, p. 73). Other services such as answering machines, call screening and voice mail were designed to relieve the pressure of immediate response (Rakow and Navarro, 1993).

In the Family Window project assessing availability to talk was made possible through the unique ability to be able to handwrite on screen (Judge, Neustaedter, and Kurtz, 2010). Researchers provided tool buttons for participants in their study enabling them to handwrite on the monitor screen, clear messages, and 'knock' as a way of family members sharing 'short bits of communication' (Judge, Neustaedter, and Kurtz, 2010, p. 2363). After feedback, the implementation of a tool for

handwriting was very successful in their project (Judge, Neustaedter, and Kurtz, 2010, p. 2363). In one instance, Judge et al. cite the daughter and 'daughter-parents' as leaving messages stating when they were going out and when they were returning - augmenting the video footage which demonstrated this, clearly signaling the need for a specific tool that indicates availability in family video communication as families 'chose to discern an awareness of presence and availability before phoning each other' (Judge, Neustaedter, and Kurtz, 2010, p. 2363). 'Knocking' was an audio awareness tool, enabling family members to touch the knock icon and a knocking sound would play on both computers (Judge, Neustaedter, and Kurtz, 2010, p. 2363).

The families interviewed for this research, however, did not have access to such unique and device-specific tools. The awareness of presence and, most importantly, availability was nevertheless negotiated through status indicators, emails, and simply knowing the times remote family members were most likely to be online.

In Andrea's family arrangements were fluid and often relied on the awareness of each other's daily lives, and online presence times, as well as spontaneous contact:

"Most of the time I'm on the computer at night anyway, or I've got my computer on. Then I just put the speakers on, and if somebody Skype's I can hear it ringing. I think the time difference is 10 hours to Germany at the moment, so when I'm at the computer here at eight o'clock at night or so; it's 10 o'clock in the morning there, and that's mostly the time when my mother is on the computer as well, because she's running a business, kind of. She does a lot of work on computer as well, so basically, that's the main time I catch her, which is also the reason why I also it's installed on my mother's computer because she's on the computer more often than my father."

A fluid arrangement was also apparent in Beth's pattern of contact with her aunt:

"Well we kind of know, because of the time difference between US and Melbourne, and she knows my pattern in terms of when I get up, and what I

do, having been here for visits so often, so we don't really pre-arrange it. The only thing will be that if we have something that we need to sort out, then I might email her, or send her a message on Skype that she'll get, and I might say 'Look I'm running now, I can't talk, but put your computer on, and later tonight if I see that your computer is on, I will know you're up and I will Skype you'. That's how we do it."

8.5.2. Changing practices and incipient talk

For the families replacing the weekly call home with Skype, there was no apparent change in the way they used Skype for their call. Their Skype use largely replicated their telephone practices. In the main the interview families phoned home at regular times and talked for longer periods. A few such as Andrea and Beth established a more flexible and fluid practice of indicating their availability to chat using a new routine through the use of the Skype status indicator.

It is possible that the practice of telephone chat is not likely to change, as Schegloff contends that the practice of 'talk' is essentially the same regardless of the technology involved (2002, p. 284). Using status indicators as discussed earlier is part of the summons and answer exchange that occurs at the beginning of conversations. From Schegloff's perspective Skype talk begins by seeing that someone is available to chat through their lit icon, and sending them a short message asking if they are available to chat. This method of initiating contact is an extension of telephony, whereas what was beginning to emerge through the interviews were new ways of communicating that show intimate connection using video. The more experienced and innovative families who used Skype were beginning to explore how to use the video medium to expand the types of conversations and experiences they could share with their remote families.

Amanda whose experience of Skype was still new and limited in video integration, recounted that her friends had a more relaxed approach to Skype calls with their children this inspired her to see future possibilities for interacting with her own children:

“They will sit their computer on the kitchen table while they are cooking dinner ... and will chat as if they are still in the same room together as they would do normally with their kids ... but at the moment it is still a novelty for us so we sit and just talk ... and we don’t leave it on. It’s usually for half an hour. I could imagine if they were going to be home and they just wanted to leave it on and I wanted to leave it on, well that then would be good.”

In some ways Amanda’s anecdote about her friends’ use of Skype illustrates the practice reported by Kraut and Fish, who noted that some subscribers “maintained long-lived calls to work partners ... without engaging in sustained conversation. They used video to create a shared office for a time, to have easy access to their partner when they anticipated frequent or unscheduled conversations” (1995, pp. 705–706). This is similar to what Schegloff calls ‘incipient talk’: conversations with no beginning or end signified by ‘hello’ or ‘bye’ but where people’s co-presence ‘is shaped by contingencies independent of the character of their talk’ (Schegloff, 2002, p. 284–285). Using video calling enables geographically separated people to feel a sense of co-presence that fosters incipient talk, where there is no formal structure, but where the co-present parties behave as if they are both present in the same location.

8.5.3. Webcams and their role in video call ‘films’

The greatest difference between telephone calls and video calls using a platform such as Skype is the visual content. Telephone and video calls both offer immediacy and personal contact through voice to family members. Through the use of a webcam, moments can be experienced and shared simultaneously. As in real life, experiences can be constructed or spontaneous. Some of the interviewees constructed experiences primarily because their extended family could not be physically present to share the moment, or location with them. It could be argued that the constructed experiences are like informal films. As there may be technical restrictions placed on what is seen by the caller, consideration needs to be given by the demonstrator as to the best angle, lighting, and whether the camera and/or computer needs to be moved in order to accommodate the perspective of the caller.

This construction places the demonstrator in the role of film director, as the caller is dependent on their ability to provide the best experience. The first of these filmic elements to be explored is location (8.5.3.1) followed by object (8.5.3.2).

8.5.3.1. Location

A common filmic theme observed in the interviews was the demonstration of living environments experienced when family members were away from home. These varied from showing colleagues accommodation when away from work (Simon), to temporary accommodation when travelling (Beth), to a new home (George and Amanda).

Simon used Skype to take a work colleague 'on a tour' of his flat when living overseas for a few months: "I've taken her on a tour of my flat and shown her the snow out the window and whatnot."

George was able to share with his family his new home interstate using video Skype. He noted that in the past he would have had to rely on a video camera to provide family with a sense of his living environment, and to do so, he would have had to visit them and show them the tape of his new home. Skype brought immediacy; he could instantaneously share with his family and extended family new items of furniture and the apartment itself:

"For example last weekend having put some new furniture into my place I was able to Skype them, pick up the laptop, and then actually show them the new house and all of the new furniture and everything; something I couldn't do without Skype. Although last time I used the digital camera to just take a movie and then I was able to show them on the laptop. This time, they were able to see it in live time as it were. That was quite nice."

As an extension of her remote mothering and caregiving Beth could be reassured about the accommodation her teenage daughter was staying in through the use of

Skype: “once, early on, I said ‘Show me the room’, so she took the mini cam and just did a slow pan, yeah.”

Obviously location-based sharing is only made possible through the use of embedded webcams in laptops. Externally mounted webcams on fixed desktop monitors can provide limited viewing, as George and Alice discovered during their initial Skype calls, but certainly tours and external locations such as balconies are not likely to be shared using a desktop computer.

8.5.3.2. Objects

Constructed films are not restricted to showing living environments for family members. Some interviewees talked about showing particular items to family members through Skype. In his interview George spoke about showing new furniture items as part of his film, and he later spoke about how his wife Alice, wanted to use Skype to show George some items including a lamp, that she and her mother bought while out shopping. In this case the length of the webcam cord on her deskbound computer prevented her from showing George the item. It would have required Alice to fetch the lamp from another the room in the house in order for him to see it:

“Alice and her mother have been going out and doing a lot of the garage sales and whatnot. A couple of weeks back Alice picked up this globe that was a lamp... It was in the bedroom last night; so she couldn’t actually move the webcam around to show me it plugged in and on.”

Middle adult Simon also used Skype to show others brochures, postcards and photographs. In this way he constructed a story about his experiences, using printed materials to supplement his story.

“Yes and you can actually show them brochures or postcards or whatever, hold them up to the screen. The other thing I use Skype for a lot too is you can actually have discussions by exchanging photos.”

8.6. Experienced users and innovation

Skype's ability to show objects and locations as well as people demonstrates a flexibility that is only limited by the users' imagination. Amanda recounted how during her time using Skype she viewed her family use in a limited way, mainly restricted to the use of a telephone with video capability, rather than making the most of a medium that offered flexibility to the end user. As discussed earlier, video calls also enable incipient talk and greater social presence. As an experienced Skype user, George's incorporation of the service into his everyday life was at a different level to Amanda. He had differentiated his use of Skype into his family communication practice. For example, George was able to find an innovative solution to a problem when away from home, and his family. Here George recalls a specific example of a Skype conversation he had with his wife, Alice when he was away from home:

"She bought some DVDs, and unfortunately they wouldn't play properly on the DVD player because they had been produced for the American market; so they're on NTSC not PAL. But, rather than me trying to work out why they wouldn't work she was able to just pick the DVD box up and hold it in front of the camera so I could see the back, and I could see the NTSC sign and was able to explain to her and then she read the back and said, oh yes. They were produced in Australia, but there is a little bit in the very fine print, that says produced for the US and Canadian market only."

George and his wife Alice, had incorporated Skype into their everyday lives beyond simply that of a telephone call replacement service. Discussions with George highlighted the ways in which they had differentiated the service, and included it within their everyday lives. To them Skype was more than a video telephone service; it enabled them to problem solve when George was away from home; it helped him stay connected with their pets; they were able to show each other purchases; and they were able to keep connecting with each other irrespective of location and time.

Skype was like a window on their other world. Thus, Skype can be seen as a service that need not be turned off, but is more like a curtain, or blind that can be drawn. In one example, George recounted how when he was away from home, Alice moved the webcam to show him their pets, as if he was simply in a different part of the house and unable to see their antics: “About as excited about it as Alice was last night when she was picking the camera up and showing us Tiger and Spot.”

The new practices emerging through the use of Skype with middle adults George, Simon, Beth, and to a limited extent Amanda, demonstrated the participants’ excitement about using their video connection to share the mundane aspects in their everyday lives with those closest to them. Like Judge, Neustaedter, and Kurtz’s work on the family window discussed earlier in 8.3, status indicators are beginning to be used by the interviewees and their families in a similar manner (2010). Status indicators reflected whether the blind was up showing family members were available, or down showing that it was not a time to interrupt. The rationale behind the blind and window analogy is simply that the interactions and sharing of experiences have moved beyond telephonic communications towards visual explanations such as the demonstrating of locations and objects visually. As if by turning on the monitor, a window was opened into their world. Beth’s extended presence on Skype was also leading towards an ‘always on’ Skype experience, where she in particular could be contacted by her remote family whenever they saw her status indicator was ‘on’.

Like other HCI researchers referred to throughout this thesis, Judge, Neustaedter, and Kurtz wanted to know how they could expand the ways in which family members were able to maintain awareness of each other through the use of a specific device, in this case a mediated space such as the computer (2010, p. 2361). The Family Window was designed to be an always-on video media space that connected two households (Judge, Neustaedter, and Kurtz, 2010, p. 2363). The difference in this study was that the family window was designed to be an ‘always-on’ device, whereas Skype did not have the capability of privacy screens although

users could elect to leave it permanently connected - however, none of the families interviewed did so.

The always-on aspect of the family window did not lessen or remove the need by the families in the Family Window study to schedule talk time between particular family members and households. Always-on capacity simply supplemented these direct interactions with indirect awareness by providing remote family members with visual opportunities to share their everyday lives. After the family window was removed, debriefing interviews with the families highlighted that the families 'felt less connected' as they were unable to see each other anymore. The families no longer had 'impromptu conversations during the day' (Judge, Neustaedter, and Kurtz, 2010, p. 2368) indicating that being able to discern availability in a discrete fashion was perhaps one of the most important aspects of the family window.

8.7. Technical difficulties and 'work' with new technologies

While there are clear indications that an always-on approach to Skype may be more prevalent in the future, the negative comments about technical difficulties of using Skype were still present even if they were minimal and mainly related to issues such as time lag during conversations. Middle adult, George, for instance, recalled during his interview that from time to time he experienced technical difficulties when using Skype: "Yes, there's always that lag associated with a conversation on Skype."

Vera also expressed her frustration at being able to watch or listen but not both:

"They've got a stronger computer than I have, and so the photos come through relatively clearly, but the voice diminishes when the photos are clear. Maybe it's my end, they're sending both signals but I'm not receiving them. I can either listen to them and have a conversation with them, or they can just send me the photos and say 'Look, we'll show you Jane, this is going to be Jane for five minutes', and I'll see her playing."

Beth's experience concerned a lack of connection through drop out:

“Oh, and sometimes, with the Skype, I find that if you’re trying to do voice and picture, especially to America, we get a lot of drop out.”

For Vera there was the added complication that the computer environment was not always fixed:

“And then the baby would move and the camera would be on someone’s toe or something. You’ve got to keep still if you’re going to have a Skype conversation with the video on, and the baby is all over the place so it doesn’t work.”

Beth’s aunt would simply return to using the phone if Skype impeded her conversations with her niece:

“Yeah, so often if the Skype is acting up, she’ll just ‘Oh hang up, get off and I’ll ring you’, ... she says the phone is actually clearer and easier for her to hear.”

These disruptions to participation and enjoyment of sharing connected moments with family remind us that technology requires work. Work to set up the hardware and software, take out subscriptions for connectivity, learn how to use it, teach others, and maintain it. Work in this sense was discussed in Chapter 7 as part of the overall discussion on Digital Media Literacy and specifically within section 7.6 as part of domestic networking. Domestic networking plays an important role in the way participants negotiated technology and ‘work’ between the generations and within the context of their connected spaces.

8.8. Conclusion: Digital applications change familial telephony practice

While the interview families studied here had all adopted Skype, all were in the incorporation phase in which the diversity of use among the families was most pronounced. Skype beginners such as Amanda had yet to find their own way of using

the service within the confines of their family's unique social culture. Their practice of using Skype had changed little from when they would telephone each other. The introduction of video did, however, introduce a greater level of intimacy, especially through social presence, but the actual incorporation and possibilities for differentiation were still emerging.

In some families such as Beth and Andrea's the use of online status indicators (OSI) revealed that some families were updating the social ritual of the weekly phone call home by making spontaneous contact with extended and remote family members. Awareness availability through the use of OSIs provided individuals with the option of contacting family members who had indicated that they were available not only through Skype, but through other services such as webmail and social networking sites. This is changing the social ritual of the weekly call home and increasing social inclusion by enabling spontaneous contact. It is also increasing the concept of tethering through the increasing awareness of people's online connectivity.

In George's family, who could be considered innovative users, the practice of Skype had moved beyond telephone practice and towards a more unique approach, using the video aspect as if it was an open window between locations that could be opened and closed, rather than something that could be switched on or off. George and his wife Alice used the video connection to share everyday information including purchases and locations, revealing that the introduction of video into the social ritual of calling can enhance conversational exchanges. This family most closely emulated the families taking part in the Family Window project in San Francisco (Judge, Newstaedter, and Kurtz, 2010). These families guided by HCI researchers were beginning to uncover the benefits of an 'always open' window to their extended and remote family members. It is very interesting to note that the families missed the open window approach when the project finished (Judge, Neustaedter, and Kurtz, 2010). The Family Window families' concepts of social inclusion within family had changed significantly; they were happy to be open and inclusive of their extended and remote families, literally providing a window into other families' worlds, as well as a window into theirs. Their notion of a connected space expanded beyond their

family home, to be inclusive of their extended families. The extended family now formed part of their domestic Connected Space, as much as they formed part of their extended families’.

The concept of an always-open window ties into the multimodal and tethered approach investigated throughout this thesis. Using a product such as Skype in this way still tethers us to our families, and it is perhaps the strongest tie considered in this thesis. Skype is now available across all platforms, mobile and fixed, and so people can be working with a Skype window open to extended family and friends, who may wish to check their location and availability.

A multimodal, and tethered approach of the kind discussed in this chapter is not in keeping with Gergen’s (2002) notion of a ‘collective reception’, but it does fit in with what Kenney (2003) contends about being ‘alone together’. That we can all listen to the same music, at the same time, even at the same location, but by using our own individual devices in order to do so. This recalls the family living room as a space of communal reception, as per Silverstone where increasingly we are using individual devices for social networking, television viewing, email reading, and Internet browsing (Bakardjieva, 2006; Gora, 2010; Rickard, 2011; Tutt, 2005).

As individuals and families, we are increasing not only our adoption of communication technologies, but also our collective use of it. In the last decade we have adopted mobile phones, laptops, wireless broadband, smart phones, and tablets. So while Gergen (2002) argues for a single communication technology for collective reception, Kenney (2003) states that we can all still share the experience, and most importantly communicate with each other, using our individual devices. We can chat online, message each other, watch videos on YouTube and now Skype each other as individuals and yet as part of the same family. We can as families extend our Connected Space to include extended and remote family members through individual devices, and particularly through further development of always-on video connections. It is just that we are sharing our experiences in Connected Space in a way in which we are in fact ‘alone together’ (Kenney, 2003).

CHAPTER 9: Conclusions and future research recommendations

This thesis set out to discover how families were communicating using digital technologies from the generational perspective of youth, middle adults and older adults. It found that the participants still preferred voice applications such as the telephone and Skype and that overall a multimodal approach to communication was prevalent. In terms of the participants themselves, following the analysis of the quantitative and qualitative data collected early in this study, the thesis focused on developing a profile of the middle adults and their position within the familial communication landscape.

Middle adults constitute a familial group that is rarely investigated unless it is to provide context to studies about their children, 'youth'. This study considers them a significant group, particularly in terms of family communication with their own preferences for technology use, as well as their own flaws and deficits in relation to understanding technology. This thesis identifies and explores the key role that middle adults play in familial communication practice in relation to the domestication of communication technologies.

The early chapters of the thesis provided an overview of the literature in relation to definitions of family and how contemporary families dwell in Connected Space. Chapter 2 examined the contemporary research in communication within the context of family by organising the literature into five areas: household studies intra- and inter-generational studies, singular focus studies, nested studies, and peer studies. This approach provided a way of considering the literature from a family framework rather than within a technology framework. The focus in this study is the family and its generational relationships, specifically that of the middle adult.

This thesis argues that domestication theory was the most generative theoretical framework to apply to this study. In Chapter 3 social theories such as SCOT theory - with its focus on social construction of technology - were considered along with the

'consumption junction', Roger's theory of innovation, and lastly, Wyatt's construction of users and non-users of the Internet (Cowan, 1987; Oudshoorn and Pinch, 2003; Rogers, 1995; Wyatt, 2003). However, this study was more complex in its approach than earlier studies conducted by the Brunel team, as people are now using multiple communication devices in multiple ways. People now possess individual devices rather than communal ones and therefore Gergen's theory of progressive privatisation also proved useful to explain the findings (2002). Schroeder's theory of multimodal connection is the final theory discussed in the chapter because not only are people using individual devices, they are using multiple devices in multiple ways to connect with each other (2010). Most importantly for families, the larger the range of devices that they use that are Internet connected the more possibilities they have for engaging in dialogic communication within Connected Space.

This thesis argues that the most appropriate way of applying qualitative research to family use of technology is to employ ethnographic methods. After looking at earlier studies by Brunel, Bott and Daly the design for the study adopted a mixed-method approach using two forms of data collection: a quantitative online questionnaire and face-to-face interviews. The quantitative online questionnaire was used to build a broad perspective of how people interacted with family members, while the qualitative data collected from in-depth face-to-face interviews increased understanding of the middle adults through interviewee reflections.

An important aspect of this thesis was the profiling of middle adults and understanding their position within the family. As argued in earlier chapters, middle adults are the hidden group within the family, as other studies have focused on youth or the older adult familial generations. The online questionnaire results discussed in Chapter 5 helped to position the middle adults as individual users of multiple forms of digital communication technologies. The questionnaire results indicated that while there appeared to be a large diversity of communication technologies used by the middle adults, there were in fact only seven selected by the middle adults from the 14 possible questionnaire responses. Respondents were able

to select from: mobile phone (voice), mobile phone (SMS), mobile phone (MMS), VoIP, Webcam, email, instant messaging, blog, discussion board, family website, online photo album, online video gallery, personal website, and social website - for example, Facebook. This reduced number of seven reflects the fact that we need communication technologies in common with others in order to be able to use them, limiting the technologies that we can actually use. These seven would be further reduced depending on the other family member being communicated with. For instance, Beth used a mobile phone, landline phone, Skype, and email to communicate with her various family members. Beth's adoption of multiple devices was not uncommon among the other middle adult interviewees with respondents, indicating that the middle adult adoption is quite developed and in some cases even sophisticated.

However, the strongest evidence for positioning the middle adults came from the face-to-face interviews. The results of these interviews were presented in Chapters 6-8. The middle adults described in these chapters highlighted the diversity of adoption and practice that exists within Australian families. Each of the middle adults profiled in Chapter 6 offered a different perspective on their familial connected space and yet all were recognisable. This study enabled us to see these participants as individuals with their own preferences for technology use, as well as their own flaws and deficits in relation to understanding technology. This thesis has revealed the key role that middle adults play in familial communication practice in relation to the domestication of communication technologies.

These same chapters also discussed the vital role middle adults played in the selection, purchase, installation and maintenance of their older adult parents' communication technologies, even when geographically separated across continents. This was seen in the families of Beth and George. This dedication to domestication ensured continued communication using a preferred application that best suited the familial needs, rather than reverting or continuing with less satisfactory older communication practices. While there was a preference for personal, mobile communication technologies rather than communal fixed

technologies - as in the past, family members still found a common way to communicate and in this thesis it was found to be 'voice'.

In terms of considering how domestication occurs the results presented in this thesis indicate that it is a more complex process than originally envisaged by the Brunel University team. The process involves negotiations and the sharing of skills and knowledge across generations, rather than simply within the household. The Brunel team and others who have studied family domestication of technology since - such as Lim and Tan, Ling and Thrane and Haddon - discuss domestication as a theoretical construct within a familial household. This thesis however considers domestication as occurring across generations and across households.

In this study, family members assisted each other with a range of tasks. However the assumption cannot be made that this will be the case in every family. For instance, Palmer discusses the success of peer learning as a way of accruing skills, particularly for older people (2011). This thesis confirms that for these families, the concept of domesticating digital technologies in families was likely to occur on an individual basis with assistance intra-generationally and across households. So while peers may be important for upskilling, the acquisition and maintenance of technology is the role of family. As a result, the family and its members are key to/or critical for the early domestication aspects of appropriation and incorporation. Full domestication as described by the Brunel University team can be seen as occurring in the latter stages of domestication for older adults.

An impediment to widespread acceptance of domestication can be seen in low digital media literacy levels primarily in older adults but also in middle adults. Literacy levels were not an issue in an era of communal use of technology; family members divided tasks - such as recording using the VCR - primarily ceding such tasks to male family members as documented by Gray (1995). In an era of individual communication technologies and an increasingly digital economy and government, everyone needs to be digitally literate in order to communicate with other family members but also to pay bills, read newspapers, and watch television. Without these

skills, people risk social exclusion. So domestication now needs to incorporate elements of digital literacy. It is no longer sufficient to consider families within the domestication process but rather within the extension of it – that is once the four phases of domestication are met in an era of individual rather than communal adoption. Families now need to plan how to not only domesticate any new technology but also how to maintain, upskill, and share their knowledge within the members of the family in an efficient and productive way.

Sharing knowledge becomes particularly important with the introduction of new technologies and their application to familial communication practice. The introduction of Skype into the interviewees' families brought not only issues of purchase, installation, and use, but also reinstated some unforeseen issues such as absent presence, the landline telephony habit of 'visiting' along with more contemporary issues - for instance, multi-tasking when using webcams. The interviewee families all had to deal with these issues by communicating with each other as much as possible about the impact the new technology was having on their individual lives. For the most part the experiences were positive but for some such as Vera, Skype had a negative impact; instead of creating an opportunity for discussion, it provided her with a sense of disconnection. Rather than discussing the impact with her family, she simply stopped using Skype. The introduction of Skype had a different impact in Amanda's life. It made her realise that the introduction of new technologies into familial communication practice did not mean repeating old ways of practice. While Rakow's concept of visiting was useful in explaining the weekly call home via Skype with her daughter and son the post-interview Amanda began to try new ways of holding Skype conversations.

The most positive aspect of Skype for the majority of families participating in this study was the increased frequency of talking. As Skype is a low-cost product all the families used it as a way of connecting with their geographically separated family members as frequently as possible, thus increasing intimate connections. For interviewees using webcams there was an experience of increased intimacy through social presence. The use of a video webcam had a strong impact on individuals such

as George who was able to see his brother for the first time in three years. Even though Skype is essentially a telephony product, unlike the landline phone families are not fixed to the social ritual of the weekly call home. Skype has a novel way of increasing frequency of contact through the use of OSIs. The use of OSIs was particularly prevalent in Beth's family, especially in her relationship with her aunt. In the future OSIs may have a greater impact on driving communication frequency, changing familial communication practice and the weekly call home.

The research question for this thesis, "How are the adult generations within a family communicating using digital communication technologies?", led to the discovery of a multimodal approach with a preference for voice technologies. This research clearly shows that respondent families do not limit themselves to one or even two technologies in their social relations with each other, as they might once have done. The respondent families used multiple methods such as mobile telephony along with Internet applications such as email, VoIP, and Skype. In relation to photography, the respondent families used their mobile phones and computers to display family photographs and videos. The results also revealed that older family members tended to use a more limited range of technologies than younger family members.

A question emerges about the stability of these results. If the interviews had been conducted in 2013 with the same respondents they may have produced different responses and different outcomes, or they not may have. As discussed in Chapter 3, technology is constantly changing. During the Brunel studies the key technologies examined were different from this study, but even then, new technologies such as the mobile phone were beginning to emerge and change communication patterns. The contemporary exponential rise of social networking platforms such as Facebook, LinkedIn, and Instagram along with location aware apps such as Check-In on Facebook have, like all other technologies before them, has altered communication patterns. However, even with the changes in technology and resultant practices it seems likely that follow-up interviews with the respondents would still reveal a preference for voice. A key factor that stands apart from the technologies we use is the human need for intimacy. In this study, the respondent families used multiple

methods but voice was always the preferred communication method because of the intimacy it offers. These respondents viewed social networking tools as ways of extending the intimacy offered by voice through the use of photographs and chat services, but not view as tools to replace it. While the writing up of this thesis occurred during the social media 'revolution', the results are timeless. The two key results about the familial landscape - recognising voice as a tool to aid intimacy and the critical role of the middle adults - are both significant outcomes. But it should also be noted that different families may have produced different results irrespective of whether they were interviewed in 2007, as was the case in this study, or in 2013, as the respondent families are 'recognisable' by Hirsch's (1994) definition but not representative.

The results from this study, can also inform future research into the relationship between family, generations and communications – in particular, the key role played by middle adults in familial communication. From the results, several key areas emerged that can be identified as potential future research initiatives:

- Domestic Networking

In the past, the use of communal technology sheltered many in the family from the day-to-day aspects of technology. Domestic networking is an important new area to explore within the context of domestication and family. With the transition towards personal communication devices, it is important that individual family members understand how to consume or purchase technology; how their technology works; and how it can be networked into the family digital space.

- Digital media literacy

This thesis has demonstrated that families are using more than one method of communication to keep connected and most significantly possibly more than one method per familial generation. Early studies largely explored familial communication through a single communication method such as mobile telephony or the Internet. That approach ignored the potential for a multimodal approach

among family members. A multimodal approach increases the necessity for digital literacy across a number of devices, platforms, and applications, and it also increases the demand for and skills required for domestic networking. In this study the interviews revealed the significant role middle adults play in domestic networking for their parents, the older adults. Middle adults assisted older adults with decision-making, purchasing, and digital literacy in order to keep the paths of communication as open and flexible as possible across the generations.

As discussed in Chapter 3 past studies have explored empowering users within public spaces such as libraries. However few have considered exploring the familial dynamics of domestic networking and how empowering other family members can improve the future of social technologies within the home and the connected space of extended family. How do older family members feel when negotiating with middle adults about aspects of domestication? Is it a productive experience or is it best negotiated peer-to-peer and managed outside the connected space of family? How do middle adults feel when attempting to navigate older adults through the consumption and domestication process with social technologies? Do these negotiations affect the power balance that exists between individuals and within families? How do we encourage both middle and older adults to explore new technologies outside their historical trajectories? This thesis offers some unique insights into the negotiation process but more studies are required to understand the short-and long-term effects of the change from communal to personal communication technologies on the middle and older adult relationship, as well as family relationships more broadly.

- Gender-specific empowerment

Closely related to domestic networking is the question of how women are empowered to use technology within the context of family. Which family members assist them with their consumption practices? Do women with families themselves feel empowered? What sites exist online to assist women with negotiating the consumption and domestication process of digital technologies? There are examples in this thesis of strong IT use by women such as middle adult Andrea and her mother.

What can we learn from these women about teaching and empowering other women? Equally, how do men learn to use technology? Where do they go to understand and empower themselves about technology adoption and networking issues specific to the family home?

- Skype and innovation

Skype offers some unique research possibilities to explore in an era of change from telephony 'visits' with family members to calls taken while undertaking other tasks. How are multi-tasking and availability monitors such as OSIs changing telephony practice? Does using video encourage greater intimacy between family members or lead to a negative sense of absent presence? Do longer sessions of video such as those used during the Family Window project increase intimacy between family members? Or was that situation culturally specific? Some interviewees were innovative in their webcam practice using Skype. How might Skype assist us in understanding innovation practice particularly but not only within families?

Families are adjusting to using digital communication technologies by empowering and encouraging each other to explore alternative and multimodal forms of connection. For some in this study, like Simon, there was a preferred method of communication; for others with a more intrepid approach such as David and Linda, their actions were more exploratory. What do the individual preferences of participants inform us of people's ongoing adoption preferences? How do power relationships within families change as people develop preferences for particular types of communication practice that may be at odds with other family members? Further study into multimodal communication practices will provide additional insight into the changing communication dynamics within families.

This study began with the aim of increasing our understanding of how Australian families are communicating using digital communication technologies. The study focused on the middle adults, an under-explored and yet very important part of the family group. Through the use of an online questionnaire and face-to-face interviews a profile of middle adults was constructed. The results showed that middle adults

were proactive users of multiple digital communication technologies and played a key role in familial communication. The middle adults were the family members who assisted the older adults with their communication needs. The role they play may vary from individual to individual but the diversity of adoption and practice within the participant families showed middle adults needed a range of skills to assist them in the domestication process on behalf of their parents. This thesis “Exploring Middle Ground”, did just that. It explored the Connected Space of familial communication in the area between ‘youth’ and ‘older adult’ and discovered the middle adult.

References

ABC (2008). 'Silver surfers: Govt launches seniors internet cafes', *ABC News*, 27 November, <http://www.abc.net.au/news/2008-11-27/silver-surfers-govt-launches-seniors-internet-cafes/221268>

ABS (2007). 8153.0 Internet Activity Summary. Retrieved 25/04/08. URL: <http://www.abs.gov.au>.

Australian Communication Media Authority (ACMA) 2007, *Media and Communications in Australian Families 2007. Report of the Media and Society Research Project*, http://www.acma.gov.au/webwr/_assets/main/lib101058/media_and_society_report_2007.pdf

Australian Communication Media Authority (ACMA) 2008, *Access to the internet, broadband and mobile phones in family households*, http://www.acma.gov.au/webwr/_assets/main/lib310665/no3_access_to_internet_broadband_and_mobile_phones_family_households.pdf.

Australian Communication Media Authority (ACMA) 2008a, *Access to the internet, broadband and mobile phones in family households. Media and Communications in Australian Families*, viewed 7 August 2009, http://www.acma.gov.au/webwr/_assets/main/lib310665/no3_access_to_internet_broadband_and_mobile_phones_family_households.pdf

Australian Communication Media Authority (ACMA) 2008a, *The Australian VoIP Market. The supply and take-up of VoIP in Australia*, viewed 07 August 2009, http://www.acma.gov.au/webwr/_assets/main/lib310210/aus_voip_market_apr_08.pdf.

Australian Communication Media Authority (ACMA) 2008b, *Telecommunications Today. Report 5: Consumer choice and preference in adopting services*,
http://archive.acma.gov.au/WEB/STANDARD/pc=PC_9058

Australian Communication Media Authority (ACMA) 2009a, *Australia in the Digital Economy. Report 2: Online Participation*,
<http://www.acma.gov.au/theACMA/Library/researchacma/Digital-society-research/research-report-series-australia-in-the-digital-economy>

Australian Communication Media Authority (ACMA) 2009b, *Convergence and Communications*, viewed 26 July 2009,
http://www.acma.gov.au/webwr/_assets/main/lib100068/convergence_comms_rep-1_household_consumers.pdf

Australian Communication Media Authority (ACMA) 2010, *Trends in media use by children and young people*,
HTTP://www.acma.gov.au/webwr/_assets/main/lib310665/trends_in_media_use_by_children_and_young_people.pdf.

Australian Communication Media Authority (ACMA) 2010a, *Australia in the digital economy: The shift to the online environment*,
http://www.acma.gov.au/webwr/_assets/main/lib310665/report-1_aust_in_the_digital_economy.pdf

Australian Communication Media Authority (ACMA) 2011, *Communications Report 2010-2011*, http://www.acma.gov.au/WEB/STANDARD/pc=PC_410254.

Adams, P 2008, 'Australian Non-Broadband Households - The View of the Late Majority', paper presented at the *Communications Policy & Research Forum*, Sydney.

Agar, J. 2003, *Constant Touch: a global history of the mobile phone*. Icon Books UK , Cambridge.

Ames, M, Eckles, D, Naaman, M, Spasojevic, M, & Van House, N A 2010a, 'Requirements for mobile photoware', *Personal and Ubiquitous Computing*, vol 14, pp. 95-109.

Ames, M. G, Go, J, Kaye, J, Spasojevic, M, 2010b, 'Making Love in the Network Closet: The Benefits and Work of Family Videochat', *CSCW '10 Proceedings of the 2010 ACM conference on Computer supported cooperative work*, pp. 145-154. DOI [10.1145/1718918.1718946](https://doi.org/10.1145/1718918.1718946)

Anderson, B, Gale, C, Gower, A. P, France, E. F, Jones, M L R, & Lacohee, H V, 2002, 'Digital Living - people-centred innovation and strategy'. *BT Technology Journal*, vol. 20, no. 2, pp. 11 - 29.

Anderson, B, & Tracey, K 2001, 'Digital Living. The Impact (or Otherwise) of the Internet on Everyday Life', *American Behavioural Scientist*, vol. 45, no. 3, pp. 456-475.

Andres, H P 2002, 'A comparison of face-to-face and virtual software development teams', *Team Performance Management: An International Journal*, vol. 8, no. 1/2, pp. 39-48.

Andrew, M 2004, '*The Internet Experiences of Women Living in Rural and Regional Australia*', Unpublished Master of Arts in Communication, University of Canberra, Canberra.

Aula, A & Käki, M 2005, 'Less is more in Web search interfaces for older adults', *First Monday*, vol. 10, no. 7.

Avrahami, D, & Hudson, S E 2006, 'Communication characteristics of instant messaging: effects and predictions of interpersonal relationships', *CSCW '06*:

Proceedings of the 2006 20th anniversary conference on Computer supported cooperative work.

Bakardjieva, M 2006. 'Domestication running wild. From the moral economy of the household to the mores of a culture', in T. Berker, M. Hartmann, Y. Punie & K. J. Ward (eds.), *Domestication of Media and Technology*, Open University Press, Berkshire.

Baker, M 2011, OMG! My Grandparents R My BFF! *The Wall Street Journal*, 9 May 2011, viewed 1 June 2011,
<http://online.wsj.com/article/SB10001424052748703280904576247152267875970.html>.

Baron, N S 2008, *Always on: language in an online and mobile world*, Oxford University Press, Oxford.

Baron, N S, & Hard af Segerstad, Y 2010, 'Cross-cultural patterns in mobile-phone use: public space and reachability in Sweden, the USA and Japan', *New Media & Society*, vol. 12, no. 1, pp. 13-34.

Barr, T 2000, *Newmedia.com.au : the changing face of Australia's media and communications*, Allen & Unwin, St Leonards, N.S.W.

Batchen, G 2000, 'Vernacular photographs' , *History of Photography*, vol. 24, pp. 262-71.

Beins, B C 2004, *Research Methods. A Tool for Life*. Pearson Education Inc., USA.

Bell, G 2006, 'The Age of the Thumb: A Cultural Reading of Mobile Technologies from Asia', *Knowledge, Technology, and Policy*, vol. 19, no. 2, pp. 41-57.

Bell, G. 2009, *Getting Connected, Staying Connected: Exploring South Australia's Digital Futures*, Adelaide: Adelaide thinkers in Residence, Government of South Australia, <http://www.thinkers.sa.gov.au/lib/pdf/GB15.pdf>

Ben-Harush, O 2010, 'Communication Patterns Within Social Networks: A Case Study of Australian Women', *PLATFORM: Journal of Media and Communication ANZCA Special Edition*, April, pp. 6-22.

Benoit, W L, & Holbert, R L 2008, 'Empirical Intersections in Communication Research: Replication, Multiple Quantitative Methods, and Bridging the Quantitative-Qualitative Divide', *Journal of Communication*, vol. 58, pp. 615-628.

Berker, T, Hartmann, M, Punie, Y, & K J Ward 2006, *Domestication of Media and Technology*, McGraw-Hill, Maidenhead, Berkshire.

Bertot, J C, & McClure, C R 1998, *Victorian Public Libraries and the Internet: Results and Issues*, Viclink, Footscray.

Bijker, W E, Pinch, T J, 1984, 'The Social Construction of Facts and Artefacts: or How the Sociology of Science and the Sociology of Technology might Benefit Each Other', [Discussion Paper]. *Social Studies of Science*, vol. 14, pp. 388-441.

Bittman, M., Brown, J E, & Wajcman, J 2009, 'The Cell Phone, Constant Connection and Time Scarcity in Australia', *Social Indicators Research*, vol. 93, no. 1, pp. 229-233. ISSN 0303-8300.

Blunt, A, & Dowling, R 2006, *Home*, Routledge, London.

Boase, J, Horrigan, J, Wellman, B, & Rainie, L 2006, *The internet and email aid users in maintaing their social networks and provide pathways to help when people face big decisions*, Pew Internet & American Life Project, Washington.

Bott, E 1971, *Family and Social Network. Roles, Norms, and External Relationships in Ordinary Urban Families*, (Second ed.), Tavistock Publications.

Bouma, G D, & Ling, R 2004, *The Research Process* (Fifth ed.), Oxford University Press, South Melbourne, Victoria, Australia.

Brace, I 2004, *Questionnaire design: how to plan, structure and write survey material for effective market research*, VA: Kogan Page, London, Sterling.

Brewer, J, & Hunter, A 2006, *Foundations of Multimethod research: synthesizing styles*, Sage Publications, Thousand Oaks, CA.

Browne, K 2005, 'Snowball Sampling: Using Social Networks to Research Non-heterosexual Women', *International Journal of Social Research Methodology*, vol. 8, no. 1, pp. 47-60.

Bryman, A 2004, *Social Research Methods*, Oxford University Press, Oxford.

Burgess, J & Green, J 2009, *YouTube: online video and participatory culture*, Polity, Cambridge, UK; Malden, MA.

Burnard, P 1994, 'Searching for meaning: a method of analysing interview transcripts with a personal computer', *Nurse Education Today*, vol. 14, no. 2, pp. 111-117.

Cameron, L, & Goggin, G 2005, 'Utilisation of Mobile Phone Services: A Comparison between Regional and Metropolitan Australia', *Telecommunications Journal of Australia*, vol. 55, no. 1, pp. 71-78.

Caron, A. H, & Caronia, L 2001, 'Active Users and Active Objects: The Mutual Construction of Families and Communication Technologies', *Convergence: The International Journal of Research into New Media Technologies*, vol. 7, no. 38.

Caron, A H, & Caronia, L 2007, *Moving Cultures: Mobile Communication in everyday life*. McGill-Queen's University Press, Montreal & Kingston, London, Ithaca.

Carroll, J, & Hartnell-Young, E 2004, *Available Just Enough: The Mobile Phone as a Safety Net for Parents and their Teenage Children*, paper presented at the Life of Mobile Data Conference, University of Surrey, UK.

Castells, M 1996, *The Rise of the Network Society*, Blackwell Publishers, Cambridge, MA.

Chadwick, B A, Bahr, H M, & Albrecht, S L 1984, *Social Science Research Method*, Prentice-Hall Inc, Englewood Cliffs, New Jersey.

Chalfen, R 1987, *Snapshot versions of life*, Bowling Green State University Popular Press, Bowling Green, Ohio.

Chalfen, R 2003, 'Celebrating life after death: the appearance of snapshots in Japanese pet gravesites', *Visual Studies*, vol. 18, no. 2, pp. 144-156.

Clark, H, H, & Schober, M, F 1992, 'Asking Questions and Influencing Answers', in J. M. Tanur (ed.), *Questions about Questions*, The Russell Sage Foundation, New York.

Colley, A 2007, 'Optus moves on voice decline' *The Australian*, 12 July 2007, <http://www.australianit.news.com.au/story/0,24897,22061751-16123,00.html>.

Cowan, R 1999, 'The Consumption Junction: A Proposal for Research Strategies in the Sociology of Technology', *The Social Construction of Technological Systems*, in Bijker, P, MIT Press, Cambridge, pp. 261 - 280.

Czaja, S J, & Lee, C C 2007, 'The impact of aging on access to technology', *Universal Access Information Society*, vol. 5, pp. 341-349.

Daly, K 1992, 'The Fit Between Qualitative Research and Characteristics of Families', in J F Gilgun, K Daly & G Handel (eds.), *Qualitative Methods in Family Research*, Sage, London.

Dare, J 2008, 'Like mother, like daughter: Intergenerational media use for kin-keeping and connection', paper presented at the ANZCA08 Conference, *Power and Place*, Wellington, New Zealand,
http://www.massey.ac.nz/massey/fms/Colleges/College%20of%20Business/Communication%20and%20Journalism/ANZCA%202008/Refereed%20Papers/Dare_ANZCA08.pdf

de Gournay, C 2002, 'Pretense of intimacy in France', in J Katz, E & M Aakhus (eds.), *Perpetual contact: mobile communication, private talk, public performance*, Cambridge University Press, New York.

de Souza, A 2006, 'Re-Conceptualizing the Mobile Phone - From Telephone to Collective Interfaces', *Australian Journal of Emerging Technologies and Society*, vol. 4, no. 2, pp. 108-127.

Detzner, D F 1992, 'Life histories: Conflict in South- east Asian refugee families', in J F Gilgun, K Daly, & G Handel (eds.), *Qualitative methods in family research*, Sage, Newbury Park, CA.

Devine, F, & Heath, S 1999, 'Chapter 3: The Family: Finch and Mason's Negotiating Family Responsibilities', *Sociological Research Methods in Context*, MacMillian Press Ltd, London.

Dickinson, A, Goodman, J, Syme, A, Eisma, R, Tiwari, L, Mival, O, 2003, 'Domesticating technology. In-home requirements gathering with frail older people', paper presented at the HCI International, Crete, Greece.

Dobashi, S 2005, 'The Gendered Use of Keitai in Domestic Contexts', in M Ito, D Okabe & M Matsuda (eds.), *Personal, Portable, Pedestrian. Mobile Phones in Japanese Life*, MIT Press.

Ewing, S, & Thomas, J 2010, *CCi Digital Futures 2010: The Internet in Australia*, Melbourne: ARC Centre of Excellence for Creative Industries and Innovation, Swinburne University of Technology.

Finn, M & Ciszewski, P 2010, 'Selling myth and metaphor: the iPad and technological adoption', *Proceedings of the Communications Policy and Research Forum*, Melbourne, Australia, 15-16 November 2010, pp. 100-112, <http://www.networkinsight.org/events/cprf10.html/group/7>

Fischer, C 1988, "'Touch someone": the telephone industry discovers sociability', *Technology and Culture*, vol. 29, no. 1, pp. 32-61.

Fischer, C S, 1992, *America Calling*, University of California Press, Berkley, Los Angeles.

Flew, T 2002, *New media: an introduction*, Oxford University Press, South Melbourne, Vic.

Gans, H J 1999, 'Participant Observation in the era of "Ethnography"', *Journal of Contemporary Ethnography*, vol. 28, pp. 540-548.

Garrett, J J 2007, 'A Cell Phone for Baby Boomers', *Businessweek.com*, 29 May, <http://www.businessweek.com/stories/2007-05-29/a-cell-phone-for-baby-boomersbusinessweek-business-news-stock-market-and-financial-advice>

Gergen, K J 2002, 'The challenge of absent presence', in J E Katz & M Aakhus (eds.), *Perpetual Contact: mobile communication, private talk, public performance*, Cambridge University Press, New York.

Goggin, G 2006, *Cell Phone Culture. Mobile technology in everyday life*, (First ed.), Routledge, Oxon.

Gora, Y 2010, 'ICTS and the Shaping of Family Life: Methodology to capture the rich interplay (and how we gain entry to explore everyday ICTs' Use)', paper presented at the *Communications Policy and Research Forum (CPRF)*, Sydney,
http://www.networkinsight.org/verve/_resources/CPRF_2010_papers.pdf

Graham, T, & Ure, J 2005, 'IP telephony and voice over broadband', *info*, vol. 7, no. 4, pp. 8-20.

Gray, A 1995, 'Technology in the domestic environment', in S Jackson & S Moores (eds.), *The Politics of Domestic Consumption*, Prentice Hall/Harvester Wheatsheaf, Hertfordshire.

Green, L 2002, *Communication, technology and society*, Allen and Unwin, Crows Nest.

Green, L, Holloway, D, & Quin, R 2004, '@ home. Australian family life and the Internet', in G Goggin (ed.), *Virtual Nation*, UNSW Press, Sydney.

Grinter, R E, Edwards, R K, Chetty, M, Poole, E S, Sung, J, Yang, J, Crabtree, A, Tolmie, P, Rodden, T, Greenhalgh, C, & Benford, S, 2009, 'The ins and outs of home networking: The case for useful and usable domestic networking', *ACM Transactions on Computer-Human Interaction (TOCHI)*, vol. 16, no. 2, DOI [10.1145/1534903.1534905](https://doi.org/10.1145/1534903.1534905).

Grundy, A F, & Grundy, J 1996, *And Not in the Home Women and Computers*, Intellect, Exeter.

Haddon, L 1992, 'Explaining ICT consumption: the case of the home computer', in R Silverstone & E Hirsch (eds.), *Consuming Technologies. Media and Information in Domestic Spaces*, Routledge, London.

Haddon, L 1999, 'European perceptions and use of the Internet', paper for the conference, *Usages and Services in Telecommunications*, 7-9 June, Arcachon.

Haddon, L 2000, 'Social Exclusion and information and communication technologies. Lessons from studies of single parents and the young elderly', *New Media & Society*, vol. 2, no. 4, pp. 387 - 406.

Haddon, L 2006a, 'Empirical studies using the domestication framework', in T Berker, M Hartmann, Y Punie & K J Ward (eds.), *Domestication of Media and Technology*, McGraw-Hill, Maidenhead, Berkshire.

Haddon, L 2006b, 'The Contribution of Domestication Research to In-Home Computing and Media Consumption', *The Information Society*, vol. 22, pp.195-203.

Haddon, L 2007, 'Looking for diversity: Children and mobile phones', in MobileMedia2007, G Goggin and L Hjorth (eds.), Sydney University Press.

Haddon L & Vincent J 2004, 'Managing a Communications Repertoire: Mobile vs Landline', *Fifth Wireless World Conference Managing Communications University of Surrey* 15-16 July.

Hampton, K 2001, *Living the Wired Life in the Wired Suburb: Netville, Glocalization and Civil Society*, University of Toronto,
http://homes.chass.utoronto.ca/~wellman/publications/living_the_wired_life/living_the_wired_life.pdf

Hanks, R S & Ponzetti, J J 2004, 'Family studies and intergenerational studies: Intersections and opportunities', in E Larkin, D Friedlander, S Newman, & R Goff

(eds.), *Intergenerational relationships: Conversations on practice and research across cultures*, Haworth, New York.

Hardhill, I, & Green, A 2003, 'Remote working - altering the spatial contours of work and home in the new economy', *New Technology, Work and Employment*, vol. 18, no. 3, pp. 212-222.

Hirsch, E 1994, 'The long term and short term of domestic consumption: an ethnographic case study', in R Silverstone & E Hirsch (eds.), *Consuming Technologies, Media and Information in Domestic Spaces*, Routledge, London.

Hjorth, L 2005, 'Locating Mobility: Practices of co-presence and the persistence of the postal metaphor in SMS/MMS mobile phone customization in Melbourne', *Fibreculture Journal*, vol. 6.

Hjorth, L 2007, 'Snapshots of Almost Contact: the Rise of Camera Phone Practices and a Case Study in Seoul, Korea', *Continuum: Journal of Media & Cultural Studies*, vol. 21, no. 2, pp. 227-238.

Hjorth, L 2009, 'Domesticating New Media. A Discussion on Locating Mobile Media', in G Goggin & L Hjorth (eds.), *Mobile Technologies. From telecommunications to Media*, Routledge, New York.

Hjorth, L & H.Kim 2005, 'Being There and Being Here: Gendered customising of mobile 3G practices through a case study in Seoul', *Convergence*, vol. 11, no. 2, pp. 49-55.

Humphreys, L 2005, 'Cellphones in public: social interactions in a wireless era', *New Media & Society*, vol. 7, no. 6, pp. 810-833, DOI: 10.1177/1461444805058164.

i@PIA 2009, *Brumby Government Gives More Victorians Internet Access*, i@PIA, Melbourne.

iinet 2009, 'iinet VOIP - call rates', viewed 14 August 2009,
<http://www.iinet.net.au/voip/call-rates.html#broadband>

Ito, M, Okabe, D, & Matsuda, M 2005, *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*, MIT Press, Cambridge, Mass.

International Telecommunications Union (ITU) 2011, *Mobile Broadband*,
<http://www.itu.int/net/itunews/issues/2010/03/09.aspx>

Janesick, V J 2004, *"Stretching" Exercises for Qualitative Researchers* (Second ed.), Sage, USA.

Judge, T K, Neustaedter, C, and Kurtz, A F 2010, 'The Family Window: The Design and Evaluation of a Domestic Media Space', *Proc. CHI 2010*, ACM Press.

Kaare, B H, Brandtzaeg, P B, Heim, J, & Endestad, T 2007, 'In the borderland between family orientation and peer culture: the use of communication technologies among Norwegian teens', *New Media & Society*, vol. 9, no. 4, pp. 603-624.

Kato, F, Okabe, D, Ito, M, & Uemoto, R 2005, 'Uses and Possibilities of the Keitai Camera', in *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*, Ito, M, Okabe, D, & M Matsdua (eds.), MIT Press, Cambridge.

Katz, J, E, & Sugiyama, S 2005, 'Mobile Phones as Fashion Statements: The Co-creation of Mobile Communication's Public Meaning', *Mobile Communications Computer Supported Cooperative Work*, vol. 31, pp. 63-81.

Katz, J E, & Aakhus, M 2002, *Perpetual Contact: mobile communication, private talk, public performance*, Cambridge University Press, Cambridge, UK.

Kavanaugh, A, Zin, T T, Rosson, M B, & Carroll, J M 2006, 'The Impact of the Internet on Local and Distant Social Ties', in P Purcell (ed.), *Networked Neighbourhoods: The Connected Community in Context*, Springer, Dordrecht.

Keep, D 2009, 'The portable shrine: Remembrance, memorial, and the mobile phone', in Lloyd, C, Rickard, S, Goggin, G (eds.), *Placing Mobile Communications: Australian Journal of Communication*, vol. 36, no. 1.

King, P 2004, *Private Dwelling: Contemplating the Use of Housing*, Routledge, London, New York.

Kraut, R E, & Fish, R S 1995, 'Prospects for video telephony', *Telecommunications Policy*, vol. 19, no. 9, pp. 699-719.

Lally, E 2002, *At Home with Computers*, Berg, Oxford, UK.

Lasen, A 2005, 'History Repeating? A Comparison of the Launch and Uses of Fixed and Mobile Phones', in L Hamill & A Lasen (eds.), *Mobile World: Past, Present and Future*, Springer, London.

Lenhart, A, Horrigan, J, & Fallows, D 2004, *Content Creation Online*, Pew Internet & American Life Project, Washington.

Lenhart, A, & Madden, M 2005, *Teen Content Creators and Consumers*, Pew Internet & American Life Project, Washington.

Licoppe, C 2010, "'The Crisis of the Summons': A Transformation in the Pragmatics of "Notifications," From Phone Rings to Instant Messaging', *Information Society*, vol. 26, no. 4, pp. 288-302.

Licoppe, C, & Smoreda, Z 2006, 'Rhythms and Ties. Towards a Pragmatics of Technologically Mediated Sociability', in R Kraut, M Brynin & S Kiesler (eds.),

Computers, phones, and the Internet: domesticating information technology, Oxford University Press, New York.

Lim, S, & Tan, Y 2003, 'Old People and New Media in Wired Societies', *Media Asia*, vol. 30, no. 2, pp. 95-102.

Ling, R 1998, "'She calls, [but] it's for both of us you know": The use of traditional fixed and mobile telephony for social networking among Norwegian parents', Kjeller, Norway.

Ling, R 2003, 'Fashion and Vulgarly in the Adoption of the Mobile Telephone Among Teens in Norway', in L. Fortunati (ed.), *Mediating the Human Body. Technology, Communication, and Fashion*, Lawrence Erlbaum Associates, Inc.

Ling, R 2004, 'Mobile Telephones and the disturbance of the public sphere', http://richardling.com/papers/2004_disturbance_of_social_sphere.pdf

Ling, R 2006, 'Exclusion of elderly persons in the case of text messaging', Telnor R & I and The University of Michigan.

Ling, R 2007, 'Children, Youth and Mobile Communication', *Journal of Children and Media*, vol. 1, no. 1, pp. 60 – 67, doi:10.1080/17482790601005173

Ling, R 2008, 'Should We Be Concerned That the Elderly Don't Text?', *The Information Society*, vol. 24, pp. 334-341.

Ling, R, & Donner, J 2009, *Mobile Phones and Mobile Communication*, Polity, Cambridge, UK.

Ling, R, & Haddon, L 2003, 'Mobile Telephony, Mobility and the Coordination of Everyday Life' in J E Katz (ed.), *Machines that Become Us: The Social Context of Personal Communication Technology*, Transaction, New Brunswick.

Ling, R, & Thrane, K 2001, "'It actually separates us a little bit, but I think that is an advantage": The management of electronic media in Norwegian households.', paper presented at the ICUST, Paris, France.

Ling, R, & Thrane, K 2002, "'I don't watch TV to like learn anything": The Leisure Use of TV and the Internet', *First Monday*, vol. 7, no. 1.

Ling, R, & Yttri, B 2002, 'Hyper-coordination via mobile phones in Norway', in J E Katz & M Aakhus (eds.), *Perpetual Contact: mobile communication, private talk, public performance*, Cambridge University Press, New York.

Ling, R, & Yttri, B 2006, 'Control, Emancipation, and Status', in R Kraut, M Brynin & S Kiesler (eds.), *Computers, Phones and the Internet. Domesticating Information Technology*, Oxford University Press, New York.

Livingstone, S 1994, 'The meaning of domestic technologies: a personal construct analysis of familial gender relations', in R Silverstone & E Hirsch (eds.), *Consuming Technologies: Media and Information in Domestic Spaces*, Routledge, London.

Lloyd, C 2007, 'The cultural connect: Mobile phone use and identity', in MobileMedia2007, G Goggin and L Hjorth (eds.), Sydney University Press, pp. 67-74.

Lohan, M 2001, 'Men, masculinities and "mundane"', in E Green & A Adam (eds.), *Virtual Gender: Technology Consumption and Identity*, Routledge, Hoboken.

Mackay, H 2008, *Advance Australia ... where?* Hachette Australia, Sydney.

Mackay, M M 2011, *Australian Mobile Phone Lifestyle Index: Mobile Phone Applications*. Australian Interactive Media Industry Association Mobile Industry Group,

http://www.aimia.com.au/enews/events/AMPLI%202011/AMPLI%202011%20ExecReport_FINAL2.0.pdf

Mackay, M M, & Weidlich, O 2008, *Australian Mobile Phone Lifestyle Index: Mobile Phone Applications. Communities and User-generated Content*. Australian Interactive Media Industry Association Mobile Industry Group,
http://www.aimia.com.au/enews/events/AMPLI%202008/AIMIA_ReportAugust2008_FULL_Final.pdf

Makice, K 2010, 'Future Geeky Gadgets to Connect Families', *Wired*, viewed 12 May, 2010, <http://www.wired.com/geekdad/2010/05/future-geeky-gadgets-to-connect-families>

McLaren, J, Zappalà, G 2002, 'The 'Digital Divide' Among Financially Disadvantaged Families in Australia', *First Monday*, vol. 7, no. 4.

McLeod, E 2009, 'The Use (and Disuse) of Mobile Phones by Baby Boomers', *International Journal of Emerging Technologies and Society*, vol. 7, no. 1, pp. 28 - 38.

Meredythy, D, Hopkins, L, Ewing, S, & Thomas, J 2002, 'Measuring Social Capital in a Networked Housing Estate', *First Monday*, vol. 7, no. 10.

Meredythy, D, & Thomas, J 2007, 'Social enterprise and aspiration: Atherton Gardens and the e-ACE network', *First Monday*, vol. 12, no. 9.

Milward, P 2003, 'The 'grey digital divide': Perception, exclusion and barriers of access to the Internet for older people', *First Monday*, vol. 8, no. 7.

Miyata, K, Boase, J, Wellman, B, & Ikeda 2005, 'The Mobile-izing Japanese: Connecting to the Internet by PC and Webphone in Yamanashi', in Mizuko Ito et al (eds.), *The Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*, MIT Press, Cambridge.

Multimedia Victoria (MMV) 2004a, *Connecting Communities: the second wave*, viewed 10 October 2011, <http://www.mmv.vic.gov.au/Community>.

Multimedia Victoria (MMV) 2004b, *Achievements of Connecting Communities*, viewed 10 October 2011, <http://www.mmv.vic.gov.au/Community>.

Molloy, S, Burgan, B, & Rao, S 2008, *Creating new markets: broadband adoption and economic benefits on the Yorke Peninsula: Systems Knowledge Concepts*, viewed August 2009, http://www.acma.gov.au/WEB/STANDARD/1001/pc=PC_311357.

Morely, D 2006, 'What's 'home' got to do with it? Contradictory dynamics in the domestication of technology and the dislocation of domesticity', in T Berker, M Hartmann, Y Punie & K J Ward (eds.), *Domestication of Media and Technology*, Open University Press, Maidenhead, England.

Morley, D, & Silverstone, R 1990, 'Domestic communication - technologies and meanings', *Media, Culture & Society*, vol. 12, pp. 31-55.

Moyal, A 1995, 'The Gendered Use of the Telephone', in S Jackson & S Moores (eds.), *The Politics of Domestic Consumption*, Prentice Hall/Harvester Wheatsheaf, Hertfordshire.

Mphande, L 2004, 'Terms for Intergenerational Relations Among the Tumbuka of Northern Malawi', *Journal of Intergenerational Relationships*, vol. 2. Nos. 3-4, pp. 147-170.

Murphie, A, & Potts, J 2003, *Culture and Technology*, Palgrave Macmillan.

Murthy, D 2008, 'Digital Ethnography An Examination of the Use of New Technologies for Social Research', *Sociology*, vol. 42, no. 5, pp. 837-855.

Nafus, D, & Tracey, K 2002, 'Mobile phone consumption and concepts of personhood', in J Katz, E & M Aakhus (eds.), *Perpetual Contact: mobile communication, private talk, public performance*, Cambridge University Press, New York.

Nansen, B, Arnold, M, Gibbs, M R, & Davis, H 2009, 'Domestic orchestration. Rhythms in the mediated home', *Time & Society*, vol.18. nos. 2/3, pp. 181-207.

Noble, G 2002, 'Comfortable and Relaxed: furnishing the home and nation', *Continuum: Journal of Media & Cultural Studies*, vol. 16, no. 1, pp. 53-66.

Noble, J 2008, 'The Power of mobile texting and the connecting of place in creating a cultural scene', ANZCA08 Conference, *Power and Place*, Wellington; New Zealand.

Norris, P 2001, *Digital divide : civic engagement, information poverty, and the Internet worldwide*, Cambridge University Press, Cambridge.

NovitaTech 2007, *NovitaTech 2007 Mobile Phone Study*, viewed 2 October 2008, <http://www.novitatech.org.au/content.asp?p=600>

Okabe, D 2004, 'Emergent social practices, situations and relations through everyday camera phone use', in International Conference on Mobile Communication and Social Change, Seoul, Korea, http://www.itofisher.com/mito/archives/okabe_seoul.pdf

Okabe, D, & Ito, M 2005, 'Keitai in public transportation' in *Personal, portable, pedestrian: Mobile phones in Japanese life*, pp. 205-17.

Oksman, V, & Rautianinen, P 2003, 'Extension of the Hand: Children's and Teenagers' Relationship With the Mobile Phone in Finland', in L. Fortunati (ed.), *Mediating the Human Body. Technology, Communication, and Fashion*, Lawrence Erlbaum Associates, Inc.

Olivier, M 2007, 'George Eastman's Modern Stone-Age Family. Snapshot Photography and the Brownie', *The Society for the History of Technology*, vol. 48, pp. 1-19.

Oudshoorn, N, & Pinch, T 2003, 'Introduction: How Users and Non-Users Matter', in N Oudshoorn & T Pinch (eds.), *How Users matter. The co-construction of Users and Technology*, MIT Press, Cambridge, Massachusetts; London, England.

Pahl, R, & Spencer, L 2004, 'Personal Communities: Not Simply Families of "Fate" or "Choice"', *Current Sociology*, vol. 52, no. 2, pp. 199-221.

Palen, L, & Hughes, A 2007, 'When home base is not a place: parents' use of mobile telephones', *Pers Ubiquit Computing*, vol. 11, pp. 339-348.

Pallant, J 2010, *SPSS Survival Manual: a step by step guide to data analysis using SPSS*, Open University Press McGraw-Hill, Maidenhead.

Palmer, S 2011, *Where do I start? Female seniors and the internet*, Council on the Ageing (WA)/ACCAN, Perth,
<http://accan.org.au/files/Reports/Where%20do%20I%20start-Female%20seniors%20and%20the%20internet.docx>.

Plant, S 2001, *On the Mobile, the effects of mobile technologies on social and individual life*, Motorola, Chicago.

Pratt, L, Wiseman, R L, Cody, M J, and P F Wendt 1999, 'Interrogative strategies and information exchange in computer-mediated communication', *Communication Quarterly*, vol. 47, no. 1, pp. 46-66.

Public Libraries Victoria Network. (2008). *Annual Survey of Victorian Public Libraries 2008-2009*. URL: <http://www.plvn.net.au/node/18>

Public Libraries Victoria Network 2011, *Annual Survey of Victorian Public Libraries 2010-2011*, <http://www.plvn.net.au/node/18>

Raban, Y, & Brynin, M 2006, 'Older People and New Technologies', in R Kraut, M Brynin & S Kiesler (eds.), *Computers, phones and the Internet: domesticating information technology*, Oxford University Press, New York.

Raffle, H, Ballagas, R, Revelle, G, Horii, H, Follmer, S, Go, J, 2010, 'Family Story Play: Reading with Young Children (and Elmo) Over a Distance', paper presented at the CHI, Atlanta, Georgia, USA.

Raffle, H, Revelle, G, Mori, K, Ballagas, R, Buza, K, & Horii, H 2011, 'Hello, is Grandma there? Let's Read! Story Visit: Family Video Chat and Connected E-Books', paper presented at the CHI, Vancouver, BC, Canada.

Rakow, L 1992, *Gender on the line: women, the telephone and community life*, University of Illinois Press, Urbana.

Rakow, L F, & Navarro, V 1993, 'Remote Mothering and the Parallel Shift: Women Meet the Cellular Telephone', *Critical Studies of Mass Communication*, vol. 10, no. 2, pp. 144-157.

Rheingold, H 1993, *The virtual community : homesteading on the electronic frontier*, Addison-Wesley Pub. Co., Reading, Mass.

Rickard, S 2003, 'Reconnecting Communities: Australian Digital Community Networks and their role in integrating offline and online communities', paper presented at the ANZCA03: *Designing Communication for Diversity*, Brisbane.

Rickard, S 2006, 'Colour My World. The Consumption Junction Meets D Digital World', *Australian & New Zealand Communication Association (ANZCA) Conference*

Proceedings, Adelaide, July 2006,

http://www.adelaide.edu.au/anzca2006/conf_proceedings/rickard_scott_digital_convergence.pdf

Rickard, S 2009, "'Are you there?': Encouraging users to move from peer-to-peer to voice over broadband", *Telecommunications Journal of Australia*, vol. 59, no. 3, pp. 42.1-42.7, <http://tja.org.au>, DOI: <http://dx.doi.org/10.2104/tja09042>

Rickard, S 2011, 'The new Aussie wireless hotspot - Home: End user investigations into wireless communications technologies within the home', *Australian & New Zealand Communication Association (ANZCA) Conference Proceedings*, July 2011, <http://www.anzca.net/conferences/anzca11-proceedings.html>

Rogers, E 1995, *Diffusion of Innovations*, Free Press, New York.

Rose, G 2003, 'Family photographs and domestic spacings: a case study', *Transactions*, vol. 28, no. 1, DOI: 10.1111/1475-5661.00074.

Rose, G, 2004, "'Everyone's cuddled up and it just looks really nice": an emotional geography of some mums and their family photos', *Social & Cultural Geography*, vol. 5, no. 4, pp. 549-564.

Russo Lemor, A M 2006, 'Making a "home". The domestication of Information and Communication Technologies in single parents' households', in T Berker, M Hartmann, Y Punie & K J Ward (eds.), *Domestication of Media and Technology*, Open University Press, Berkshire.

Salt, B 2007, *The Big Picture. Life, Work and Relationships in the 21st Century*, Hardie Grant Books, Prahran, Victoria.

Sawhney, N, & Gomez, H 2000, *Communication Patterns in Domestic Life: Preliminary Ethnographic Study*,

<http://pubs.media.mit.edu/index.jsp?section=docdetail&id=210688&collection=Media+Lab&filtercollection=Media+Lab>

Schegloff, E A 2002, 'Beginnings in the telephone', in J E Katz & M Aakhus (eds.), *Perpetual Contact. Mobile Communication, Private Talk, Public Performance*, Cambridge University Press, Cambridge.

Schroeder, R 2010, 'Mobile phones and the inexorable advance of multimodal connectedness', *New Media & Society*, vol. 12, no. 75, pp. 75-90.

Schuler, D 2001, 'Digital Cities and Digital Citizens', paper presented at the *Community Networks and Related Topics (Technology, Media, Democracy, Society)*. Viewed 2 August 2002, <http://www.scn.org/commnet/Papers/digital-citizens.html>

Schwartz Cowan, R 1999, 'The Consumption Junction: A Proposal for Research Strategies in the Sociology of Technology', in P Bijker (ed.), *The Social Construction of Technological Systems*, MIT Press, Cambridge.

Scifo, B 2005, 'The Domestication of Camera Phone and MMS Communication', NYIRI, K 2005, *A sense of Place. The Global and the Local in Mobile Communications.*, Viena, Pasagen Verlag, pp. 363-74.

Sciriha, L 2006, 'Teenagers and Mobile Phones in Malta: A Sociolinguistic Profile', in L Fortunati, P Law & S Yang (eds.), *New technologies in global societies*, World Scientific Publishing Co. Pty Ltd, Singapore.

Skog, B 2002, 'Mobiles and the Norwegian teen: identity, gender, and class', in J E Katz & M Aakhus, (eds), *Perpetual Contact: Mobile Communications, Private Talk, Public Performance*, MIT Press, Cambridge.

Silverstone, R 1993, 'Time, Information and Communication Technologies and the Household', *Time & Society*, vol. 2, no. 3, pp. 283-311.

Silverstone, R 1994, *Television and a place called home Television and Everyday Life*, Routledge, London.

Silverstone, R, Hirsch, E, & Morley, D 1991, 'Listening to a long conversation: An ethnographic approach to the study of information and communication technologies in the home', *Cultural Studies*, vol. 5, no. 2, pp. 204-227.

Silverstone, R, Hirsch, E, & Morley, D 1994, 'Information and communication technologies and the moral economy of the household', in E Hirsch, R Silverstone & M Strathern (eds.), *Consuming Technologies: Media and Information in Domestic Spaces*, Routledge, London.

Singh, S 2001, 'Gender and the use of the internet at home', *New Media & Society*, vol. 3, no. 4, pp. 395-416.

Skype.com 2011, 'Microsoft to Acquire Skype', Press Release,
http://about.skype.com/press/2011/05/microsoft_to_acquire_skype.html

State Library of Victoria (SLV) 2010, *State Library of Victoria. Cultural Diversity Action Plan: 2011-2013*,
<http://www.slv.vic.gov.au/sites/default/files/Cultural%20diversity%20action%20plan.pdf>

Sterne, J 2003, *The Audible Past. Cultural origins of sound reproduction*, Duke University Press, Durham & London.

Taylor, A S, & Harper, R 2002, 'Age-old practices in the "New World": A study of gift-giving between teenage mobile phone users, *CHI '02 Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, pp. 439-446,
DOI:[10.1145/503376.503455](https://doi.org/10.1145/503376.503455).

Tee, K, Brush, A J B, & Inkpen, K M 2009, 'Exploring communication and sharing between extended families', *International Journal of Human-Computer Studies*, vol. 67, no. 2, pp. 128-138.

Telstra 2008, 'Telstra gives \$100k to ASSCA to help older Australians become computer savvy', viewed 29 October 2008,
<http://www.telstra.com.au/abouttelstra/media/announcements>

Telstra 2009, *Telstra in the Community*,
<https://www.telstra.com.au/abouttelstra/download/document/TLS0001-Community-Report.pdf>

Telstra 2011, 'Bundle and Save', viewed 2 January 12,
http://www.telstra.com.au/bundle_save/home-bundles.html

Thom, G 2010, 'Internet is our food and drink', *News.com.au*,
<http://www.news.com.au/internet-is-our-food-and-drink-story-e6frf7kx-1225896804453?>

Thomann, A 2006, 'Skype - A Baltic Success Story', viewed 2008, <https://infocus.credit-suisse.com/app/article/index.cfm?fuseaction=OpenArticle&aoid=163167&coid=7805&lang=EN>

Tu, C, & Mclsaac, M 2002, 'The Relationship of Social Presence and Interaction in Online Classes', *The American Journal of Distance Education*, vol. 16, no. 3, pp. 131-150.

Tutt, D 2005, 'Mobile Performances of a Teenager: A Study of Situated Mobile Phone Activity in the Living Room', *Convergence: The International Journal of Research into New Media Technologies*, pp. 58-75.

Valent, D 2011, 'Modern family: bound by gadgets', *Digital Life. Sydney Morning Herald*, 10 August, <http://www.smh.com.au/digital-life/digital-life-news/modern-family-bound-by-gadgets-20110810-1ilnx.html>

van Zoonen, L, & Aalberts, C 2002, 'Interactive Television in the Everyday Lives of Young Couples', in M Consalvo & S Paasonen (eds.), *Women & Everyday Uses of the Internet: agency & identity*, Peter Lang.

Vincent, J 2009, 'Emotion, My Mobile, My Identity', in J Vincent & L Fortunati (eds.), *Electronic Emotion. The mediation of Emotion via Information and Communication Technologies*, Peter Lang, Bern, Switzerland.

Wada, K, & Shibata, T 2008, 'Social and physiological influences of robot therapy in a care house', *Interaction Studies*, vol. 9, no. 2, pp. 258-276.

Wajcman, J 1995, 'Domestic technology: labour-saving or enslaving?', in S Jackson & S Moores (eds.), *The Politics of Domestic Consumption*, Prentice Hall/Harvester Wheatsheaf, Hertfordshire.

Wajcman, J 2000, 'Reflections on Gender and Technology Studies: In What State is the Art?', *Social Studies of Science*, vol. 30, no. 3, pp. 447-464.

Wajcman, J 2010, 'Feminist theories of technology', *Cambridge Journal of Economics*, vol. 34, pp. 143-152.

Wajcman, J, Bittman, M, & Brown, J 2008, 'Families without Borders: Mobile Phones, Connectedness and Work-Home Divisions', *Sociology*, vol. 42, no. 4, pp. 635-652.

Wajcman, J, Bittman, M, & Brown, J 2009, 'Intimate Connections. The Impact of the Mobile Phone on Work/Life Boundaries', in G Goggin & L Hjorth (eds.), *Mobile Technologies: from telecommunications to media*, Routledge, New York.

Wajcman, J, & Haddon, L 2005, 'Technology, time and everyday life', paper presented at the Oxford Internet Institute (OII) Seminar.

Wallman, S 1984, *Eight London Households*, Tavistock, London.

Walsh, M 2009, 'Portable music device use on trains: A "splendid isolation"?', in Lloyd, C, Rickard, S, Goggin, G (eds.), *Placing Mobile Communications: Australian Journal of Communication*, vol. 36, no. 1.

Watkins, H 2006, 'Beauty Queen, Bulletin Board and Browser: Rescripting the refridgerator', *Gender, Place and Culture*, vol. 13, no. 2, pp. 143-152.

Wellman, B, & Hampton, K, N 1999, 'Living Networked On and Off Line', *Contemporary Sociology*, vol. 28, no. 6, pp. 648-654.

Whitchurch, G G, Dickson, F C, 1999, 'Family Communication', in Sussman, M B, Steinmetz, S K, & G W Peterson (eds.), *Handbook of marriage and the family*, Plenum Press, New York; London.

Wilding, R 2006, 'Virtual' intimacies? Families communicating across transnational contexts', *Global Networks*, vol. 6, no. 2, pp. 125-142.

Wilding, R, & Baldassar, L 2009, 'Transnational family-work balance: experiences of Australian migrants caring for ageing parents and young children across distance and borders', *Journal of Family Studies*, vol. 15, no. 2.

Williams, A, Ota, H, Giles, H, Pierson, H D, Gallois, C, Ng, S, Lim, T, Ryan, E, Somera, L, Maher, J, Cai, D, & Harwood, J 1997, 'Young People's Beliefs About Intergenerational Communication', in *Communication Research*, vol. 24, no. 4, August 1997, pp. 370-393.

Winnicott, D W 1965. *The Family and Individual Development*. Tavistock Publications, London.

Wong, W W 2006, 'Mobile Phones, Aged Homes, and Family Relations in Hong Kong Preliminary Observations', in P I Law, L Fortunati & S Yang (eds.), *New technologies in global societies*, World Scientific Publishing Co. Pty Ltd, Singapore.

Wyatt, S. 2003, 'Non-Users Also Matter: The Construction of Users and Non-Users of the Internet', in N. Oudshoorn & T. Pinch (eds.), *How Users Matter: The Co-Construction of Users and Technologies*. Cambridge, Mass: The MIT Press.

Yarosh, S, Chew, Y C D, & Abowd, G, D 2009, 'Supporting parent-child communication in divorced families', *International Journal of Human-Computer Studies*, vol. 67, no. 2, pp. 192-203.

Zainudeen, A, Iqbal, T, & Samarajiva, R 2010, 'Who's got the phone? Gender and the use of the telephone at the bottom of the pyramid', *New Media & Society*, vol. 12, no. 4, pp. 549-566.

Appendices

Appendix 1: Copy of the online questionnaire

Section 1/4: About you and your family

Thank you for taking the time to participate in this questionnaire.

This first section of the questionnaire focuses on questions about your family and how you live. I have included some definitions below to help you better understand the terms in the questionnaire.

Generation: In this study the word generation is used to explain your position within the family. For example, normally there are three living generations in a family. Children, parents, and grandparents. It is important to remember that the terms used do not reflect your age but rather your position within the family.

This means that in this study 'youth' are considered the youngest members of your family. It is tempting to think of ourselves as 'youth' and sometimes this could be you, but if you or your siblings have children then you belong in the 'middle' generation.

If you are 'middle' rather than youth, then your parents are considered the eldest generation (of the three) and are therefore referred to in this study as 'older adults'.

If you are a grandparent, then you are most likely to be an 'older adult'. Your children are considered 'middle' and your grandchildren 'youth'.

The questionnaire should take you between 10 - 20 minutes to complete. To show your progress, a sliding scale appears at the top of each screen.

1. Think about your position within your family. To which generation of your family do you belong?

	Youth	Middle	Older Adult
I am	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Are you male or female?

- ☐ Male
- ☐ Female

3. Please tick the age group you belong in.

- ☐ 18 - 24 years
- ☐ 25 - 34 years
- ☐ 35 - 44 years
- ☐ 45 - 54 years
- ☐ 55 - 64 years
- ☐ 65 and above

4. and do you have any children?

- ☐ Yes
- ☐ No

5. Please tick the statement which best describes your main occupation.

- ☐ I have a home office and work from home full time.
- ☐ I'm retired.
- ☐ I work part time.
- ☐ I am temporarily not working.
- ☐ I work full time at home caring for my children.
- ☐ I work full time outside the home.
- ☐ I'm a full time student.

Family generational use of digital technology.

- ☐ I have a home office and work from home part time.
- ☐ I work part time outside the home and the rest of the time I care for my children at home.
- ☐ I choose not to work.

Where does your family live?

6. How would you describe your living arrangements? Please tick one sentence.

- ☐ I live alone or in a group household (without any family).
- ☐ I live at home with my parents
- ☐ I live in a single parent household.
- ☐ I live as a couple with my partner.
- ☐ I live with my partner and with children living here full time.
- ☐ I live with my partner and with children living here part time.
- ☐ I live with my partner with all three generations of my family.
- ☐ Other (please specify)

7. Where do you live? Please enter your postcode in the box provided below.

8. We are told by the media that families are becoming more geographically separated. Which of the following best describes your family (e.g. parents, children, grandchildren, siblings)? Please tick one sentence.

- ☐ We all live in the same suburb or town.
- ☐ We live in the same city but in different suburbs.
- ☐ We live in the same state but in different cities/towns.
- ☐ Some of us live in one state while others live in another.
- ☐ We all live in different states.
- ☐ Some of our family lives overseas

Overseas Family members

9. Who in your family currently live overseas? and in which country are they living?

For each family member living overseas please select a country from the pulldown menu.

	Country
brother	<input type="text"/>
sister	<input type="text"/>
mother	<input type="text"/>
father	<input type="text"/>
daughter	<input type="text"/>
son	<input type="text"/>
granddaughter	<input type="text"/>
grandson	<input type="text"/>
grandmother	<input type="text"/>
grandfather	<input type="text"/>
niece	<input type="text"/>
nephew	<input type="text"/>
aunt	<input type="text"/>
uncle	<input type="text"/>

Section 2/4 Technology and keeping in contact with your family

In this second section of the questionnaire, you will be asked questions about the technology you use to keep in touch with your family.

In this first question there is a variety of technology listed. Please do not feel intimidated if you do not use the technology - just select 'Does not apply'. People use a wide variety of technology and devices depending on their needs.

10. In the last six months, have you contacted any family members (children, parents, siblings, grandparents, nieces and nephews, grandchildren) nearby and/or further away by any of the following methods?

In this study 'nearby' refers to someone within a forty minute drive of your home.

Please answer all questions by placing a tick in as many boxes per row as apply.

	Family nearby	Family far away	I don't do this at all	Not in the last six months
I spoke using the landline phone to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I spoke using the mobile phone to (voice services only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I chatted using VoIP (e.g. Skype) to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I chatted using a webcam to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I visited in person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I visited in person and showed them photos on a portable multimedia player (e.g. PSP, iRiver, iPod)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I visited in person and shared music through a portable digital music device (e.g. iPod)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I wrote a letter and posted it to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Family generational use of digital technology.

I 'posted' an e-card to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I sent an email to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I sent an email and attached photos to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I sent an e-newsletter which included photos and/or graphics to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I sent an instant message to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I posted a comment on the family blog to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I posted comments and uploaded photos to the family blog to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I uploaded photos to my photo album/gallery and sent update notices to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I uploaded videos and sent notices to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I posted a message on the family discussion board to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I sent a SMS (short message service) to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I sent a MMS (multimedia message service) to	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. Please tick items on the list that you use in everyday life.

- ☐ gaming equipment (e.g. PlayStation)
- ☐ laptop computer
- ☐ portable gaming equipment (e.g. PlayStation portable (PSP))
- ☐ mobile phone
- ☐ Digital camera (excluding the one on your phone)
- ☐ landline phone (at home)
- ☐ portable media player (e.g. plays music, video and displays photos)
- ☐ desktop computer
- ☐ portable music device (e.g. iPod)
- ☐ web enabled Personal Digital Assistant (a touch screen personal computer often referred to as a 'Palm')
- ☐ wireless mobile device (e.g. Blackberry)
- ☐ Other (please specify)

12. If you don't understand something or feel unsure when using technology (e.g. your mobile phone, computer or the Internet), do you ask a family member for help?

- ☐ Yes
- ☐ No

Help with Technology

13. Who in your family do you ask for help with technology?

Internet @ home

14. Do you have an Internet connection at home?

- ☐ Yes
- ☐ No

Internet Connection at home

15. In the last six months how often have you used these devices to connect to the Internet at home?

Please tick 'I don't use this' if you do not use the technology at all, and 'Never' if you do ... but not during the last six months.

	Never	Rarely	Sometimes	Often	I don't use this
Computer - dial up	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Computer - high speed (this includes cable modem, broadband and ADSL)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Computer - high speed wireless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smartphone - a high end mobile phone with personal organiser	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wireless email device (e.g. Blackberry)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Web enabled Personal Digital Assistant - touch screen personal computer often referred to as a "Palm"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
portable media player (e.g. PSP, iPod, iriver)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
gaming equipment (e.g. PlayStation 3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. In the last six months, which family member have you kept in touch with the most?

Please note the answers listed deliberately exclude intimate partners such as husbands and wives, and members of the same generation, i.e. siblings. You need to choose a family member from the list provided.

17. What is your main method in keeping in contact with this person?

- ☐ By mobile phone (voice)
- ☐ By mobile phone - SMS (short message service)
- ☐ By mobile phone - MMS (multimedia message service)
- ☐ Family blog
- ☐ Family domain
- ☐ Family website
- ☐ Family online photo album/gallery
- ☐ Family online video gallery
- ☐ Family discussion board
- ☐ Family instant messaging
- ☐ Family VoIP (e.g. Skype)
- ☐ My website
- ☐ My domain (e.g. www.johnsmith.com.au)
- ☐ My blog
- ☐ My discussion board
- ☐ My online photo album/gallery
- ☐ My online video gallery
- ☐ My instant messaging
- ☐ My VoIP
- ☐ By webcam
- ☐ By email
- ☐ By landline phone (not VoIP)

18. Is there a second family member with whom you have regular contact using either a mobile phone (non voice) or the Internet? Please select one person and the technology you use to you keep in touch.

	Technology
My mother	<input type="text"/>
My father	<input type="text"/>
My son	<input type="text"/>
My daughter	<input type="text"/>
My niece	<input type="text"/>
My nephew	<input type="text"/>
My grandmother	<input type="text"/>
My grandfather	<input type="text"/>
My aunt	<input type="text"/>
My uncle	<input type="text"/>
My grandson	<input type="text"/>
My granddaughter	<input type="text"/>

19. Is this your preferred method of keeping in touch with this person?

- ☐ Yes
- ☐ No

20. Since you would prefer to use another media to keep in touch with this person, please tick which media you would prefer.

- ☐ Mobile phone (voice)
- ☐ Mobile phone - SMS (short message service)
- ☐ Mobile phone - MMS (multimedia message service)
- ☐ VoIP (e.g. Skype)
- ☐ Webcam
- ☐ Email
- ☐ Instant Messaging
- ☐ Landline phone (not VoIP)
- ☐ Family blog
- ☐ Family domain
- ☐ Family website
- ☐ Family online photo album/gallery
- ☐ Family online video gallery
- ☐ Family discussion board
- ☐ Family instant messaging
- ☐ Family VoIP (e.g. Skype)
- ☐ My website
- ☐ My domain (e.g. www.johnsmith.com.au)
- ☐ My blog
- ☐ My discussion board
- ☐ My online photo album/gallery
- ☐ My online video gallery
- ☐ My instant messaging
- ☐ My VoIP
- ☐ Other (please specify)

21. Where does this family member live in relation to you?

- ☐ We live in the same house
- ☐ We live in the same suburb or town
- ☐ We live in the same city but in different suburbs
- ☐ We live in the same state but in different cities/towns
- ☐ We live in different states
- ☐ They live overseas

22. Please rate how much you agree with EACH of the following statements.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	I don't use this
"I only use my mobile for work."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Once I would have rung people to let them know I'm thinking of them, now I send a SMS or an email."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"My mobile is for emergency use only."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"I think the Internet is great. I don't upload much but I like to download videos and music."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"I only use my mobile to talk to people. I don't send SMS or MMSs."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"While I have a large number of numbers stored in my mobile phone, I only keep in regular contact with say three - five people. They are all close friends or family."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"My mobile is for personal use only."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"I have personalised my phone." ('Personalise' means to choose your own ringtone, background image, perhaps even decorate it with a coloured skin or dangle.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"The only time I spend online is at work doing work things. Sure I spend a little time finding out information for things at home, and checking my personal email account, but most of the time it's for work use only."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"I would describe myself as a person who spends a lot of personal time online (some would say 24/7 :-) creating content (writing or uploading images such as photos) for my own blog or website. I also spend time sending/reading emails and/or instant messages."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"I use my mobile to coordinate my day. I send/receive msgs confirming times, dates and venues."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Internet or mobile?

In this section of the questionnaire you are asked to choose either Internet media or your mobile phone as the main method to keep in touch with family.

23. Which do you use the most to keep in contact with your family?

- ☐ my mobile phone
- ☐ Internet media (blogs, email, galleries, discussion boards, newsletters, instant messaging, VoIP)

Section 3/4: Internet media

24. Does your family have their own ...(please tick which apply to your family)

- ☐ Family Newsletter (newsy emails and photos)
- ☐ Family Blog
- ☐ Family domain (e.g. www.smith.com.au)
- ☐ Family website
- ☐ Family online photo album/gallery
- ☐ Family online video gallery
- ☐ Family discussion board
- ☐ Family VoIP (e.g. Skype) chats
- ☐ Family instant messenger chats
- ☐ No, we don't have any of these

25. Do you contribute to any of these family media? (Please tick which apply to you.)

- ☐ No, I don't contribute
- ☐ Family newsletter
- ☐ Family blog
- ☐ Family domain
- ☐ Family website
- ☐ Family online photo album/gallery
- ☐ Family online video gallery
- ☐ Family discussion board
- ☐ Family group email
- ☐ Family VoIP (e.g. Skype) chats
- ☐ Family instant messenger chats

26. Why do you not contribute? Please tick answers that most closely resemble responses you would give. Or select other and tell me why.

- ☐ I like to 'lurk' and read about what everyone else has been doing. (Lurk: read what everyone else has written but not contribute)
- ☐ I don't have access to digital equipment such as a digital camera so I can't send photos to upload.
- ☐ I hate writing so I don't contribute when that's required.
- ☐ While I have access to the Internet, and would like to contribute, I don't understand how the particular technology (e.g. discussion board or blog) works.
- ☐ Other (please specify)

27. Sometimes there is one member of the family who keeps everyone in contact. For each of the following media - who is this person in your family? Use the pull down menus to nominate a person. You can nominate more than one.

	Family Member
Family Newsletter (e.g. written in HTML or as a separate attachment to an email)	<input type="text"/>
Family blog	<input type="text"/>
Family VoIP chats (e.g. Skype)	<input type="text"/>
Family domain	<input type="text"/>
Family Photo Album/Gallery	<input type="text"/>
Family group emails	<input type="text"/>
Family online video gallery	<input type="text"/>
Instant Messaging	<input type="text"/>
Newsy emails and photos	<input type="text"/>
Family discussion board	<input type="text"/>

28. If you use instant messaging - do you attach photos to family member ids?

- ☐ Yes
- ☐ No, because I can't do this with the software I'm using.
- ☐ No, because I don't know how to do this.
- ☐ No, because they wouldn't let me take their photo.
- ☐ No, because I'm limited to avatars or graphics - but I do assign those to family members.
- ☐ No, because I don't use instant messaging

29. Do you keep a selection of photos featuring a family member/s...

Please tick all that apply to you

- ☐ as a background image on my computer screen
- ☐ as a screensaver on my computer
- ☐ on a portable device e.g. Personal Digital Assistant
- ☐ on a portable media player e.g. iPOD
- ☐ on my mobile phone
- ☐ in a digital photo frame (digiframe)at home
- ☐ in a digital photo frame at work
- ☐ Other (please specify)

Section 4/4: Family Merchandise

Computers and the Internet enable us to create our own personal products such as cards to send and share with family. For example, we can create e-cards to send to family members on their birthdays using our own digital photos.

This section asks whether you create and produce any family merchandise (e.g. t-shirts, cards, calendars, books) and which technology you might use to do so.

30. In the last six months, have you sent or received from a family member one of the following?


- ☐ fridge magnet (featuring photos of family member/s or photos taken by family member/s)
- ☐ key ring (featuring a photos of family member/s or photos taken by family member/s)
- ☐ No, our family doesn't produce any of these
- ☐ mouse mat (featuring photos of family member/s or photos taken by family member/s)
- ☐ canvas print (featuring photos of family member/s or photos taken by family member/s)
- ☐ a digital card (a card that is created and produced digitally, printed and posted offline)
- ☐ a commercial e-card (commercial cards available free online that are sent usually via email)
- ☐ an e-card (that has been created by and sent to you electronically by the creator)
- ☐ a calendar (featuring photos of family member/s or photos taken by family member/s)
- ☐ a T-shirt (featuring photos of family member/s or photos taken by family member/s)
- ☐ a photo book - like a photo album but in book format (featuring photos of family member/s or photos taken by family member/s)
- ☐ a mug (featuring photos of family member/s or photos taken by family member/s)
- ☐ digital photos sent by email or instant message (featuring photos of family member/s or photos taken by family member/s)
- ☐ digital photos stored on a CD or DVD (featuring photos of family member/s or photos taken by family member/s)
- ☐ a printed photo (featuring photos of family member/s or photos taken by family member/s)
- ☐ Other (please specify)



31. Did you make one of the above items that you sent? If so, did you use any of the following to do so?

(Please select as many as you used and include additional items in the 'other' space.)

- ☐ No, I didn't make one of those items
- ☐ Digital camera
- ☐ Camera phone
- ☐ The web to source graphics and fonts
- ☐ Wordprocessing software (e.g. Microsoft Word)
- ☐ Graphics software (e.g. Photoshop)
- ☐ Design and layout software (e.g. MS Publisher)
- ☐ Other (please specify)



32. Do images in these products feature photos of family members?

- ☐ Yes
- ☐ No

33. Did you have any of these items made in a local store? (e.g. Ted's Cameras, Officeworks, local High Street shop)

- ☐ Yes
- ☐ No, I used an overseas online store
- ☐ No, I used a local store that has online facilities
- ☐ No, I used an Australian online store
- ☐ No, I print at home
- ☐ No, I print at work
- ☐ Other (please specify)



E-cards

E-cards are a popular way to stay in touch.

34. Do you send e-cards to family?

- ☐ Yes
- ☐ No

35. Please rate how much you agree with the following statements about creating e-cards.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
I am not interested in creating e-cards I still buy cards from a shop.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would like to create my own cards but I don't know how to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to create my own cards using specialty software and photos I have chosen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to use a commercial e-card supplier as then all I have to do is select the images and write my own message.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't like adapting or creating e-cards as it takes too much time. I prefer to simply send a SMS, MMS or email.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

36. Please rate how much you agree with EACH of the following statements about sending e-cards to family members.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
I like sending commercial e-cards as some websites have electronic reminders so you don't miss important occasions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like e-cards because they are quick and easy to send.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like e-cards because you can choose your own words and graphics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E-cards are great because they are usually free.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would send an e-card for a religious occasion such as Christmas and Easter.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would send an e-card for a sporting event such as the footy Grand Final.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would send an e-card for a birthday.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thanks!

Thank you for completing this questionnaire and participating in the project.

One last question :-)

Section 3/3: Mobile Phones

37. How do you use your mobile phone to keep in contact with your family?**Do you... (Please tick as many as apply)**

- ☐ use voice to speak with family
- ☐ use SMS to txt family
- ☐ use MMS to send photos to family
- ☐ use the Internet via your mobile to email family
- ☐ Other (please specify)

38. Which option best describes the mobile phone you use? (Tick only one of the three)

	Internet connected	Not Internet connected
I use a basic mobile phone which is	<input type="radio"/>	<input type="radio"/>
I use a cameraphone (mobile phone with camera) which is	<input type="radio"/>	<input type="radio"/>
I use a Smartphone (a high end mobile phone with personal organiser) which is	<input type="radio"/>	<input type="radio"/>

39. If members of your family speak more than one language, do you speak in different languages depending on the generation you are talking with on the phone?

For example, do you speak in English with your parents and then in Cantonese with your grandparents?

Please use the pull down menu to select the main language you use to speak with each family member.

	Language 1
When I talk with my siblings I speak in	<input type="text"/>
When I talk with my mother I speak in	<input type="text"/>
When I talk with my father I speak in	<input type="text"/>
When I talk with my grandfather I speak in	<input type="text"/>
When I talk with my grandmother I speak in	<input type="text"/>
When I talk with my grandchildren I speak in	<input type="text"/>
When I talk with my children I speak in	<input type="text"/>
When I talk with my niece I speak in	<input type="text"/>
When I talk with my nephew I speak in	<input type="text"/>
When I talk with my aunt I speak in	<input type="text"/>
When I talk with my uncle I speak in	<input type="text"/>

40. and what about when you txt? What language do you use when you SMS with another generation in your family?

	Language 1
When I SMS my siblings I txt in	<input type="text"/>
When I SMS my mother I txt in	<input type="text"/>
When I SMS my father I txt in	<input type="text"/>

Family generational use of digital technology.

When I SMS my grandfather I txt in	<input type="text"/>
When I SMS my grandmother I txt in	<input type="text"/>
When I SMS my grandson I txt in	<input type="text"/>
When I SMS my granddaughter I txt in	<input type="text"/>
When I SMS with my children I txt in	<input type="text"/>
When I SMS with my niece I txt in	<input type="text"/>
When I SMS with my nephew I txt in	<input type="text"/>
When I SMS my aunt I txt in	<input type="text"/>
When I SMS my uncle I txt in	<input type="text"/>

Family mobile photography

41. Do you take photos or videos of your family on your mobile phone?

- ☐ I only shoot photos with my mobile phone.
- ☐ I only shoot videos with my mobile phone.
- ☐ I shoot both photos and videos with my mobile phone.
- ☐ I don't shoot either photos or videos with my mobile phone.

42. How many family photos are stored in your phone today?

- ☐ 0. I don't have any stored at the moment
- ☐ 1 - 5
- ☐ 6 - 10
- ☐ 11 - 15
- ☐ 16 - 20
- ☐ 21 - 30
- ☐ 31 - 50
- ☐ more than 51

43. Which family members do you take photos of? Please tick as many as apply.

- ☐ my son/s
- ☐ my daughter/s
- ☐ my husband
- ☐ my wife
- ☐ my father
- ☐ my mother
- ☐ my nephew/s
- ☐ my niece/s
- ☐ my grandfather/s
- ☐ my grandmother/s
- ☐ my brother/s
- ☐ my sister/s
- ☐ my aunt/s
- ☐ my uncle/s
- ☐ my pet/s
- ☐ my family as a group

44. What do you do with these photos?... Please tick all that apply to you.

- ☐ upload them to the family photo album/gallery
- ☐ upload them to the family website
- ☐ upload them to the family blog
- ☐ upload them to my personal photo album/gallery
- ☐ upload them to my own blog
- ☐ upload them to my own website
- ☐ send them via MMS to family
- ☐ send them via my phone internet connection to family using email
- ☐ print them off after downloading them onto my computer
- ☐ download and store them on my computer
- ☐ show them to family using the phone screen when we next catch up
- ☐ show them to family using a portable media player (e.g. iPod) when we next catch up
- ☐ burn them to CD/DVD
- ☐ display them in a digital photo frame (digiframe) at home
- ☐ display them in a digital photo frame (digiframe) at work

45. How many family videos are stored in your phone today?

- ☐ 0, I don't have any stored at the moment
- ☐ 0, I only shoot photos
- ☐ 1 - 5
- ☐ 6 - 10
- ☐ 11 - 15
- ☐ 16 - 20
- ☐ 21 - 30
- ☐ 31 - 50
- ☐ more than 51

46. What do you do with these videos?... Please tick all that apply

- ☐ upload them the family video gallery
- ☐ upload them to the family website
- ☐ upload them to the family blog
- ☐ upload them to my personal video gallery
- ☐ upload them to my own blog
- ☐ upload them to my own website
- ☐ send them via MMS to family
- ☐ send them via my phone internet connection to family using email
- ☐ download them to my computer and keep them stored there
- ☐ download them to my computer and show to family when we next catch up
- ☐ show them to family using the phone screen when we next catch up
- ☐ burn them to CD/DVD

47. Do you use a family photo as a background image (or in the case of flip phones on the front cover) on your phone?

- ☐ Yes
- ☐ No, because I can't do that on my phone.
- ☐ No, because I don't know how to do that.
- ☐ No, because I choose not to.

**48. Who is in the photo that you use as a background image on your phone?
Please tick the item that best describes who is in the photo.**

- ☐ My partner
- ☐ One of my children
- ☐ All of my children
- ☐ My family (partner and children)
- ☐ Partner and pet
- ☐ One of my children and pet/s
- ☐ All of my children and pet/s
- ☐ My mother
- ☐ My father
- ☐ My parents
- ☐ One/All of my siblings
- ☐ Another family member such as grandparent, grandchildren, niece, nephew, aunt or uncle.
- ☐ My pet
- ☐ Other (please specify)

49. How long have you used this particular photo as a background image?

- ☐ One day
- ☐ One week
- ☐ A fortnight
- ☐ One month
- ☐ 2 - 6 months
- ☐ 7 - 12 months
- ☐ over 13 months

50. Do you use the thumbnail photo option in your contacts file? (ie take photos of family and have their photo appear when they ring you on your phone)

- ☐ Yes
- ☐ No, because I can't do this on my phone
- ☐ No, because I don't know how to do this
- ☐ No, because they wouldn't let me take their photo

Thanks!

Thank you for completing this questionnaire and participating in the project.

One last question :-)

51. Where did you hear about this project and questionnaire?

- ☐ Monash University affiliated website, newsletter or email.
- ☐ Friend or acquaintance.
- ☐ From an email list circulated by friends.
- ☐ Other (please specify)

Appendix 2: Call for Participants

[Monash University](#) > [News and Events](#) > [Monash Memo](#) > [Notices](#)

Communications study

Published: 29 August 2007

Do you communicate with your children via SMS? Do you chat with overseas family members using SKYPE? Or perhaps you take photos of your children with your mobile phone? This study is investigating how Australian families are communicating using digital technologies such as the mobile phone and the Internet.

PhD candidate Scott Rickard from the National Centre for Australian Studies is seeking individual participants for an online questionnaire and participant families for interviews.

Please note - participation in this project is not dependent on your proficiency of technology. The study is intended to present a snapshot of all users -- infrequent and frequent.

The researcher is expecting to find a variety of skill levels, adopted devices and usage patterns by users within the study. The study's focus is on generational communication and diversity of practice.

Information about the project and how to participate is available from the [project website](#).

The online questionnaire, accessible from the project website, should take between 10 and 20 minutes to complete and will be open to participants until Monday 24th September 2007.

Anyone above the age of 18 who is an Australian resident can participate in the project.

For more information, email [\[redacted\]](#)

Notices submissions

Email items of up to 150 words, as plain text in the body of an email, to [\[redacted\]](#)

The deadline is noon on Friday.

More information at [Global Email](#) website or phone [\[redacted\]](#)

[Monash University](#) > [News and Events](#) > [Monash Memo](#) > [Notices](#)

Communications study

Published: 5 September 2007

Do you communicate with your children via SMS? Do you chat with overseas family members using SKYPE? Or perhaps you take photos of your children with your mobile phone? This study is investigating how Australian families are communicating using digital technologies such as the mobile phone and the Internet.

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[Monash University](#) > [News and Events](#) > [Monash Memo](#) > [Notices](#)

Family communication study

PhD candidate Scott Rickard from the National Centre for Australian Studies is investigating how Australian families are communicating using digital technologies such as the mobile phone and the Internet.

Families are needed for interviews. The study's focus is on generational communication and diversity of practice and the types of families needed to participate are not limited to the traditional notion of family ie two parents and children living in the one home. The researcher is keen to also interview family members who are from different generations and who are over 18. For example, mother with daughter/son in their twenties.

Information about the project and how to participate is available from the [project website](#). Anyone above the age of 18 who is an Australian resident can participate in the project.

For more information, email [REDACTED]

Notices submissions

Email items of up to 150 words, as plain text in the body of an email, to [REDACTED]

The deadline is noon on Friday.

More information at [Global Email](#) website or phone [REDACTED]

[Monash University](#) > [News and Events](#) > [Monash Memo](#) > [Notices](#)

Family communication study

Published: 3 October 2007

PhD candidate Scott Rickard from the National Centre for Australian Studies is investigating how Australian families are communicating using digital technologies such as the mobile phone and the Internet.

Families are needed for interviews. The study's focus is on generational communication and diversity of practice and the types of families needed to participate are not limited to the traditional notion of family ie two parents and children living in the one home. The researcher is keen to also interview family members who are from different generations and who are over 18. For example, mother with daughter/son in their twenties.

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For more information, email [REDACTED]

Notices submissions

Email items of up to 150 words, as plain text in the body of an email, to [REDACTED]

The deadline is noon on Friday.

More information at [Global Email](#) website or phone [REDACTED]